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Products, News & Information Data Centers Can Trust. Since 1979

In This Issue...

COVER FOCUS

Top Mistakes To Avoid

What are some of the most common mistakes made when it comes to renovating a data center, virtualization, and other key topics? And how do you solve them? We talked with industry experts to find out.

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Data Center Projects On A Budget

If your enterprise is like most, chances are you could always benefit from saving a little extra money when undertaking new data center projects. We rounded up some tips and tricks to help.

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TECH & TRENDS

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Avoid Renovation Woes

Careful Planning Can Help Sidestep Serious Mistakes When Renovating A Data Center

by Carmi Levy

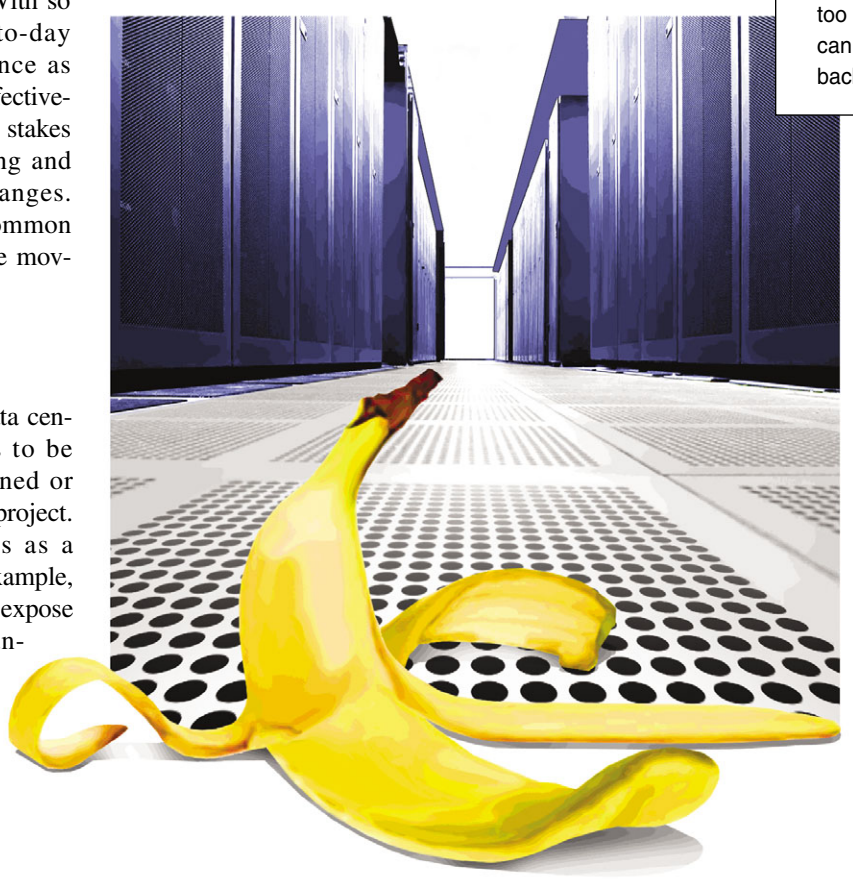
• • •

Renovating a data center has often been likened to repairing an airplane while in flight. Unlike many other IT projects, shutting down the facility during the process typically isn't an option. With so much riding on day-to-day data center performance as well as the long-term effectiveness of the facility, the stakes are high when planning and implementing any changes. Keep the following common mistakes in mind before moving forward.

Not Planning Far Enough Ahead

The last thing any data center manager wants is to be forced into an unplanned or last-minute renovation project. This usually happens as a result of a crisis; for example, a systems failure might expose a critical lack of redundancy in cooling infrastructure or a year-end project with a heavy deadline might unexpectedly overload the facility's power capacity. The ensuing data center renovations, planned and implemented without sufficient lead times, end up costing more and exposing the organization to unnecessary risk.

To combat this problem, proactively monitor your infrastructure's usage and effectiveness within the data center to understand long-term trends. This allows projects to be added to the manifest long before monitoring systems start turning red. Also, integrate your planning with your organization's project managers and program managers to better understand their implementation plans and how they may eventually affect the data center. Plan to attend key status meetings to ensure you're aware of their plans and they're aware of yours. If data center capacity planning isn't already incorporated into their project plans, it should be.



"The biggest thing that data center managers have to think about is that they don't want this

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Key Points

- Avoid expensive, risky, emergency renovation projects by anticipating upcoming organizational changes.
- Pay attention to power and cooling—even small changes to the facility can result in major environmental upheaval.
- Don't over-virtualize. There is such thing as too much virtualization, and overdoing it can expose the organization to significant backup and disaster recovery risks.

Is The Turnaround On Its Way?

Be Prepared By Planning For Economic Growth

by John Brandon

• • •

Clouds have darkened over the U.S. economy of late, and they are not the clouds we normally discuss (those related to cloud computing). Instead, employment rates continue to drop, the housing market is troubled in many areas, and companies are struggling to find new ways to increase revenues. And yet, not every economic indicator predicts doom and gloom. Since late June, the Dow Jones has actually made a rebound, and tech companies such as Google are doing just fine.

In fact, in a recent CDW IT Monitor poll (www.cdwitmonitor.com), the indicators are looking up. Eighty-three percent of midsized enterprises surveyed expect that they'll buy new software within the next six months (up 5% since April), 28% of large businesses plan to hire staff members in the same time period (up 5% since April), and 52% of federal IT decision makers expect to see budget increases in the next six months (up 17% since April).

For data center managers, now might be the time to plan for a rebound, even if it is still important to keep a tight rein on spending and focus on critical business operations.

"Expecting a turnaround is likely to result in increased IT budgets, so IT can expand their wish lists beyond preserving the status quo," says Charles King, an analyst with PUND-IT. "With Windows 7 coming down the pike, it might be a good time to investigate the condition of PCs and notebooks and strategic services like online client backup. Downturn or not, companies just keep creating/storing more and more data every year, so updating or expanding storage environments is a sensible investment. Though many seem to think the economy has touched bottom, it's still a buyer's market for IT, so there are some terrific bargains available for companies willing to take the plunge."

Key Points

- Keeping closely aligned with the business needs prepares IT to expand when the business expands.
- Expect that the backlog of projects now possible under a rebounded economy will require IT to keep pace, especially when it comes to networking and storage services.
- For companies less sure of a rebound, a renewed focus on operations is even more important.

Planning For An Upturn

Planning for a turnaround is a difficult proposition, especially with such a tight

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Contact Name: _____

Company Name: _____

Address: _____

City: _____ State: _____ Postal Code: _____

Country: _____

Email: _____ Web Address: _____

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   - ☐ Less than 10
   - ☐ 10 to 99
   - ☐ 100 to 199
   - ☐ 200 to 499
   - ☐ 500 to 999
   - ☐ 1,000+

2. **How often do you purchase computer hardware/software?**
   - ☐ Weekly
   - ☐ Bi-weekly
   - ☐ Monthly
   - ☐ Quarterly
   - ☐ Annually
   - ☐ No Involvement

3. **What is your annual computer hardware/software purchasing budget?**
   - ☐ $0 to $9,999
   - ☐ $10,000 to $24,999
   - ☐ $25,000 to $49,999
   - ☐ $50,000 to $99,999
   - ☐ $100,000 to $249,999
   - ☐ $250,000 to $499,999
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   - ☐ $1,000,000+

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www.Processor.com

Also In This Issue...

TECH & TRENDS

■ Servers, workstations, and storage devices can be had for much cheaper than the usual list price. The only catch is that the **equipment is used** .....**page 35**

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■ As older, **unused equipment** accumulates, organizations can easily find themselves behind the 8-ball, which in turn can spawn irresponsible disposal decisions. But such decisions can contribute not only to worldwide environmental and safety issues, but also to problems that can lead back to organizations themselves .....**page 37**

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■ The **merging of two networks** can prove to be an especially daunting challenge for network administrators who must quickly combine disparate systems and ensure that they work well together from day one.....**page 26**

■ Eventually, you are going to find yourself needing to **update your server configuration** or, in some cases, replace it entirely. But with what, exactly? .....**page 28**

■ **Moving data center operations** is a delicate matter, but sometimes a migration is necessary. In such cases, there are a host of do's and don'ts to consider.....**page 28**

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■ **Virtualization** solution provider ScaleMP leverages its virtualization technology to aggregate multiple standard x86 servers into one virtual environment for streamlined management .....**page 39**

■ Konica Minolta Business Solutions primarily sells **multifunction products**, color printers, and monochrome printers. Its multifunction product lines are its biggest sellers .....**page 42**

PRODUCTS

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■ Running the **nightly backup** is a familiar chore for data center managers. That's why the National Cowboy & Western Heritage Museum turned to CoreVault for help .....**page 20**

■ Greenhill & Co. wanted to outsource its **Exchange server management** without having to outsource the Exchange server itself .....**page 20**

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News

Software Pirate Fined

The BSA (Business Software Alliance) has revealed a major win for software copyright holders. A U.S. District Court in California ruled in favor of the BSA and its member companies, who claimed that Matthew Miller of Newark, Del., illegally sold software from Adobe, Autodesk, and Microsoft on the Internet auction site iOffer. The court ruled back in May that Miller should pay $210,563 in damages and court costs, but the BSA was only just recently allowed to release the details of the case. Miller apparently burned the software to CD and sold about 200 copies for between $8 and $12 each. Miller was also ordered to destroy any infringing copies of the software that he retained. The BSA infrequently pursues individuals but made an exception in Miller's case.

RIM's Hopes Of Bidding On Nortel Are Fading

Swedish firm Ericsson is currently negotiating the purchase of bankrupt Canadian firm Nortel's LTE and CDMA unit for $1.13 billion; however, Canadian firm and BlackBerry maker Research In Motion has petitioned the Canadian government to block the deal, although Canada's Prime Minister Stephen Harper has made it clear that RIM's chances are slim. The deal is unlikely to be derailed by any direct action from the Canadian government; however, there's still time to appeal the Nortel-Ericsson transaction, and RIM hopes to overturn its previous disqualification to bid on Nortel's assets before that deadline passes. Tony Clement, Canada's industry minister, has indicated that the deal could still be reviewed by the Canadian government.

Chinese Government Drops Green Dam Requirement

Yielding to international pressure, China will not be requiring that its Green Dam filtering software be installed on PCs and other consumer hardware intended for private use, according to Li Yizhong, the country's industry minister. Intended to block pornography and other deleterious material, the software was widely attacked outside China as a vehicle to block access to antigovernment information, as a barrier to trade, and as a boon to hackers. The software will still, however, be installed in China's schools and Internet cafés.

Baidu Dominates China's Search Engine Market

Although Google reigns supreme in the United States, the primary online search tool in China is Baidu, according to a study from iResearch. Baidu's Q2 market share went up to 75.7%, an increase of 1.6% from the first quarter, and Google managed only 19.8%, a drop of 1.1% from the first quarter. Microsoft's Bing attracted 0.3% of Chinese searchers following its early June release. The study found that a number of searchers use Google when they want to search in English, but when they search in Chinese, they use Baidu.

Microsoft Builds Office Suggestion Site

A new Web site designed by a pair of Microsoft employees has been launched as a way for users to offer suggestions for improving their Office experience. MakeOfficeBetter.com was created by Luke Foust, a developer in the Office test group, and Steve Zaske, a planner of the Office development team, to collect customer ideas on how to improve Microsoft Office. The Web site is not an official Microsoft site but rather a way to gather ideas and post the content for the Microsoft development team to consider. There are categories for Office, Beta, Word, Excel, PowerPoint, Outlook, Access, and OneNote. Besides suggesting ideas, users can also vote for the suggestions they'd most like to see implemented in Office.

Sony Ericsson Names New President

Mobile phone maker Sony Ericsson has chosen Bert Nordberg to be the company's next president. Nordberg, a 14-year veteran of Ericsson who currently leads the company's networking research and development efforts in Silicon Valley, will replace Hideki Komiyama, who plans to retire at the end of the year. Nordberg will become co-president with Komiyama in September to ensure a smooth transition. Nordberg says he plans to invigorate the struggling company's mobile handset lineup and focus on software and mobile Internet applications. Sony Ericsson has lost about $1 billion since last year, and its market share has dropped to about 5%.

Q2 Online Retail Sales Drop

According to comScore, online retail sales fell in the second quarter, marking the second consecutive quarter of year-over-year decline. Compared with results from Q2 2008, online retail sales declined by 1% to $30.2 billion. Overall online retail sales have not demonstrated growth since the third quarter of last year; however, comScore found that certain online retail categories did experience growth when compared to a year ago: toys and hobbies (up 21%); books and magazines (up 17%); and video games, consoles, and accessories (up 15%).

WATCH THE STOCKS

This information provides a quick glimpse of current and historical stock prices and trends for 14 major companies in the technology market.

Company	Symbol	Year Ago	Aug. 6 $	Aug. 20 $	% change from previous issue
AMD	AMD	$5.81	$3.69	$3.52	▼ 4.61%
CA	CA	$24.48	$21.53	$22.63	▲ 5.11%
Cisco Systems	CSCO	$24.71	$22.31	$21.89	▼ 1.88%
Dell	DELL	$25.27	$13.16	$14.55	▲ 10.56%
Google	GOOG	$490.59	$450.36	$460.41	▲ 2.23%
HP	HPQ	$47.06	$42.21	$43.98	▲ 4.19%
IBM	IBM	$124.93	$117.38	$118.95	▲ 1.34%
Intel	INTC	$23.49	$18.70	$18.71	▲ 0.05%
McAfee	MFE	$39	$42.73	$41.73	▼ 2.34%
Microsoft	MSFT	$27.84	$23.46	$23.67	▲ 0.9%
Oracle	ORCL	$22.70	$21.21	$21.94	▲ 3.44%
Red Hat Software	RHT	$21.72	$21.93	$21.93	Uchgd.
Sun Microsystems	JAVA	$10	$9.15	$9.27	▲ 1.31%
Symantec	SYMC	$22.06	$15.27	$15.35	▲ 0.52%

NOTE: This information is meant for reference only and should not be used as a basis for buy/sell decisions.

News

RIM Tops *Fortune*'s List Of Fastest-Growing Companies

Business magazine *Fortune* announced its annual list of the world's fastest-growing companies, and smartphone maker Research In Motion took the No. 1 spot. The rankings are based on three years of revenue and profit growth and total return, according to *Fortune*, and this is the first year it has included firms outside of the United States. However, to be included, companies must trade on a U.S. exchange and file quarterly reports. RIM, the maker of the BlackBerry smartphones, had average revenue growth of 77% over the past three years and average earnings-per-share growth of 84%.

Lenovo Issues Battery Recall

Lenovo is recalling the batteries on six of its popular ThinkPad models, citing errors that could cause the batteries to fail. ThinkPad models affected include R60, R61, T60, T61, X60, and X61. Batteries in question either have low battery capacity or issue an "irreparable damage" or "battery cannot be charged" error message from Power Manager or Message Center. The company says the battery failures are not a safety concern. To find out if ThinkPad batteries are impacted by the recall, users can run the Battery Diagnostic Tool available at download.lenovo.com/lenovo/content/batt/082009/LandingPage.html. The company is offering free replacements for batteries impacted by the recall.

Fluke To Buy AirMagnet

Fluke Networks, which specializes in network installation, testing, and monitoring, announced its intent to purchase AirMagnet, which provides availability, performance, and security tools for wireless networks. Fluke is based in Everett, Wash.; AirMagnet is based in Sunnyvale, Calif. David Coffin, Fluke Networks president, says the combined company "will provide the end-to-end network visibility network engineers need and the actionable information required to deploy, secure, manage, analyze, and troubleshoot their networks, independent of media type." Terms of the agreement, which is expected to close within the next few weeks, were not disclosed.

Sprint Settles Class-Action Lawsuit

Communications services firm Sprint Nextel has agreed to pay $17.5 million to settle a lawsuit it faced over early termination fees in its wireless contracts. The company will place $14 million in a common fund for distribution to those who joined the class-action lawsuit and will provide $3.5 million in non-cash benefits; Sprint Nextel was originally sued for

$1.2 billion. The suit covers Sprint, Nextel, and Sprint Nextel customers, excluding those with government or corporate contracts, who signed a contract between July 1, 1999, and Dec. 31, 2008. Sprint has also agreed to not insert a flat-rate early termination fee provision into personal wireless service contracts until Jan. 1, 2011. Other major carriers, including AT&T and Verizon, have also been sued over early termination fees.

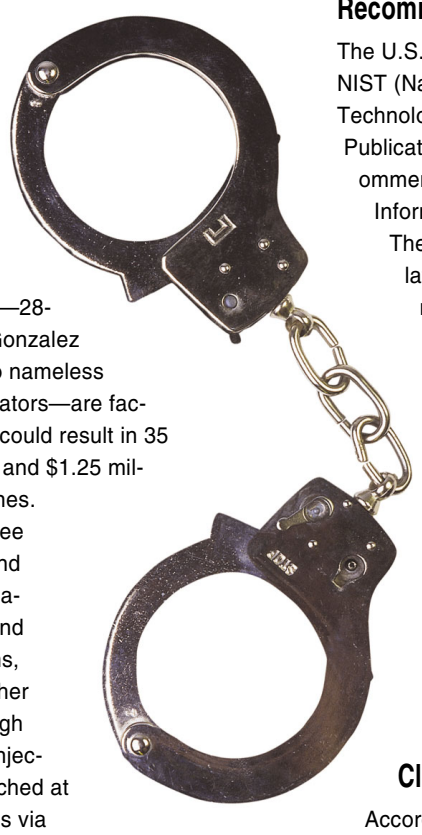
Qwest Ditches Wireless Services

Qwest Communications will abandon its wireless mobile phone services on Oct. 31, in order to refocus its attention on its landline services. It currently has a partnership with Verizon Wireless and will begin selling Verizon Wireless services to existing wireless customers. According to its earnings report, Qwest has 763,000 customers, but only about 25% utilize its wireless services. Qwest used to offer Sprint services, but it became a Verizon Wireless dealer last year.

Industries Believe Recession Could End Soon

According to a recent survey performed by KPMG, which polled about 400 CEOs and other C-level executives across various industries, technology executives are optimistic about seeing an end to the current economic recession soon. Half of the financial services executives and more than half of technology executives (57%) said the U.S. economic recovery would be "substantially completed" by the end of 2010, rather than continuing into 2011. An overwhelming percentage of those surveyed (76%) expect their business conditions to be much improved in as little as one year.

Three Indicted For Stealing 130 Million Credit & Debit Card Numbers



Three men believed to be responsible for stealing 130 million credit and debit card numbers are being indicted by the United States. The men—28-year-old Albert Gonzalez of Miami and two nameless Russian collaborators—are facing charges that could result in 35 years of jail time and $1.25 million or more in fines. Together, the three hijacked credit and debit card information from Heartland Payment Systems, 7-Eleven, and other companies through the use of SQL injection attacks launched at victims' Web sites via proxy servers used to cover up their tracks. The large-scale identity theft occurrence has security experts reconsidering compliance mandates and further security defenses.

BMC Acquires MQ Software

In an attempt to strengthen its presence in the middleware and application management arena, BMC Software is acquiring MQ Software. Although BMC has gained ground with its data center automation and change management database products of late, it has been losing middleware and application management business to competitors. MQ Software has about 300 customers and will give BMC new tools for monitoring IBM's WebSphere MQ, which is used by 92% of large IT enterprises. The terms of the agreement were not disclosed.

Bing Gains Market Share; Google, Yahoo! Lose

In its second month of existence, Microsoft's new Bing search engine has enjoyed modest growth of half a percentage point. Bing, which debuted with rather warm reviews, commanded an 8.9% share of the U.S. home/work/university location market in the month of July, up from 8.4% in June. Meanwhile, market dominator Google slid 0.3% to 64.7% in the same time period. Microsoft's new partner Yahoo!, for which it will soon supply Bing's search capabilities across all Web properties, took a similar tumble of 0.3% to a 19.3% share last month.

HP Tops Q3 Expectations

Computer maker HP has posted its third-quarter earnings, reporting revenue of $27.5 billion for the quarter, which just topped Wall Street analysts' predictions of $27.2 billion. The company's net income, however, fell from $2 billion (or 80 cents per share) to $1.6 billion (or 67 cents per share) year-over-year. In the Americas, HP saw an 8% increase in revenue to $12.6 billion, while revenues declined throughout Europe, the Middle East, and Africa by 12%. HP expects its revenue to rise 8% in Q4.

Latest NIST Federal Security Recommendations Released

The U.S. Department of Commerce's NIST (National Institute of Standards and Technology) recently released Special Publication 800-53, a report titled "Recommended Security Controls for Federal Information Systems and Organizations." The 237-page report discusses the latest suggested practices for minimizing network vulnerabilities in government agencies, but its lessons carry over to any business, school, or organization with Internet access. It also discusses compliance with FIPS (Federal Information Processing Standards) 199 and 200 security levels. The report was prepared by the Computer Security Division of NIST's Information Technology Laboratory.

Survey Looks At Private Cloud App Development

According to a study by Evans Data, about half of developers surveyed plan to deploy applications in a private cloud, with 29.7% already working on applications and 19.2% planning to begin development within a year. Of those surveyed, 48% view Java as the best development language. About three-quarters of developers surveyed believe that applications deployed in the cloud should be backed up locally, whether that storage is onsite or in a private cloud.

Mobile Service Customer Ratings

According to a report from J.D. Power and Associates, which surveyed more than 12,000 wireless subscribers, wireless customer service has improved over levels in February. The current study found that 76% of customer service calls resolved the issue on the first call compared to 66% from the February study. In terms of overall satisfaction, Alltel Wireless, T-Mobile, and Verizon Wireless tied for first place, with AT&T further behind in second place and Sprint Nextel just behind in third.

Upcoming IT Events

Are you looking to learn more about data center or IT topics? Network with some of your peers? Consider joining a group of data center professionals. If you have an event you'd like listed, please send an email to feedback@processor.com.

- SEPTEMBER -

PASS Wisconsin SQL Server User Group
Sept. 8
Green Bay, Wis.
wisconsin.sqlpass.org

AFCOM Central Ohio
Sept. 9, 11:30 a.m.
Columbus, Ohio
www.afcomcentralohio.org

AITP-Central Idaho
Sept. 9, 11:45 a.m.
Owyhee Plaza Hotel
1109 Main St.
Boise, Idaho
www.boisestate.edu/dpma/dpmaci/centida.html

AITP San Diego
Sept. 9, 5:30 p.m.
Cloud Computing Event
San Diego, Calif.
sandiego.aitp.org

AITP Washington D.C.
Sept. 10, 6:30 p.m.
Alfio's Restaurant
4515 Willard Ave.
Chevy Chase, Md.
aitpwashdc.ning.com

ISSA Northeast Ohio
Sept. 10
Corporate College East
4400 Richmond Road
Warrensville Heights, Ohio
neoissa.org

AITP Garden State
Sept. 15
www.aitp.org/organization/chapters/chapterhome.jsp?chapter=21

AITP Southwest Missouri
Sept. 15
Springfield, Mo.
aitpspringfield.org

Central Ohio PMI
Sept. 15, 8 a.m.
Platform Labs
1275 Kinnear Road
Columbus, Ohio
www.platformlab.org

Central Ohio VMware User Group
Sept. 15, 9 a.m.
Platform Labs
1275 Kinnear Road
Columbus, Ohio
www.platformlab.org

ICCA Kansas City
Sept. 15, 7:30 a.m.
Perkins Restaurant
Overland Park, Kan.
www.icca-kc.org

ISSA St. Louis Chapter
Sept. 15
St. Louis, Mo.
stl.issa.org

Oklahoma City AITP Chapter
Sept. 15
Oklahoma City, Okla.
www.aitp.org/organization/chapters/chapterhome.jsp?chapter=40

AITP Northeastern Wisconsin Chapter
Sept. 16, 4:15 p.m.
Holiday Inn Select
150 S. Nicolet Road
Appleton, Wis.
new.aitp.org

ISSA New Jersey
Sept. 16
nj.issa.org

ISSA Oklahoma City
Sept. 16
Spaghetti Warehouse
101 E. Sheridan Ave.
Oklahoma City, Okla.
www.issa-okc.org

For more Upcoming IT Events, see page 10.

PRODUCT SPOTLIGHT

A Look At What's Hot In The Power Distribution Market

Cyber Switching Dualcom Series

The Dualcom Series of PDUs from Cyber Switching features an event log that tracks events such as changes in outlet states, logins and logoffs, and the IP address of logins. You can choose to receive event logs through email automatically, and you can add descriptive names to each outlet to help you stay better organized. The outlets display the total system current and overcurrent warnings on the front panel. Additionally, if there is a power outage, the outlet memory will restore the outlet. You can also choose to stagger the start of outlets to protect hardware connected to the unit when the power is restored.

Best For: Enterprises that need remote control over their power distribution to avoid overheating.

- Comprehensive event log with alerts sent via email
- Ability to name each outlet
- Front-panel display of the total system current and overcurrent warning
- Management via Web browser, Telnet, and SNMP

$625
(888) 311-6277 | www.cyberswitching.com

Cyber Switching Dualcom S Series With Temperature & Humidity Monitoring

Cyber Switching's Dualcom S Series PDUs provide outlet-level temperature and humidity monitoring designed to make your data center more environmentally friendly. The unit uses external sensors to monitor changes in the environment and sends an alert once any of the conditions have exceeded the threshold; additionally, a secondary remote sensor lets admins monitor the environmental conditions of a surrounding area up to 30 feet. The Dualcom S Series PDUs offer the ability to monitor each outlet's current, power off each outlet, and schedule each outlet to power on and off at specific times, and the Cyber Breaker feature provides circuit breaker protection by allowing for configuration of unused outlets. The units can be managed through a Web browser, Telnet, or SNMP.

Best For: Organizations looking for an environmentally friendly power plan.

- Serial-enabled
- Secondary remote sensor for expanded monitoring area
- Event logging
- Cyber Breaker feature for circuit breaker protection

$815
(888) 311-6277 | www.cyberswitching.com

Cyber Switching E Series

The E Series offers true RMS current and voltage measurement with a three-digit display that flashes when the current tops 80% of its rating or when a high- or low-voltage condition exists. The E Series PDUs are available in both 20A and 30A models and in 0U vertical or 1U horizontal configurations.

Best For: Companies looking for more control over their current power distribution.

- True RMS voltage measurement
- 8-foot cord
- Available as 20A and 30A models
- Load capacity of 2,400VA

$299
(888) 311-6277 | www.cyberswitching.com

Eaton Advanced Monitored ePDU

Eaton's Advanced Monitored ePDU products give IT managers the ability to monitor, track, and manage power consumption at the receptacle level for all equipment in the data center. The data captured can be used to evaluate energy efficiency and infrastructure capacity. Designed for high-density, mission-critical server applications, the monitored ePDU provides maximum power for both standard and blade servers. Employing multiple configurations, the easy-read digital ammeter, and remote power management with clearly labeled circuits, the ePDU assures easy management and monitoring for current requirements and future expansion.

Best For: Organizations that need to monitor and track the power consumption of high-density, mission-critical server applications.

- High-density configurations reduce enclosure space requirement
- Fuse-less design significantly reduces reset time
- UL Listed (UL 489) branch circuit breakers meet UL60950-1 Edition requirements
- Easy-read digital ammeter reduces local monitoring time (auto scroll capability)
- True RMS ammeter provides accurate power measurement

$1,066 (800) 386-1911 | www.epdu.com

Eaton V55 ePDU

Eaton V55 series high-density ePDU integrates current and temperature monitoring into a 60A vertical strip. This three-phase solution allows for branch circuit monitoring of up to 48 outlets over Ethernet. The configuration options include C13 or C19 outlets and various plug types. Output voltage is 208 volts to provide power supply efficiency. The outlets are connected to six branch circuit breaker sections, with load current monitoring for each section. There is a local LED amp display, and the unit is Ethernet-enabled for Web browser or SNMP monitoring. There is integrated temperature monitoring for two locations with optional probes.

Best For: IT managers looking for a temperature monitoring solution.

- Detachable mounting brackets allow for several mounting options; tool-less mounting hardware is included
- Six 2-pole 20A circuit breakers are located on the front panel
- UL 289 Listed electromagnetic circuit breakers
- Meets branch circuit breaker requirements
- Breaker switch is flush with panel when on to prevent accidental shutoff and shows red when in the off or tripped position

$1,424 (800) 386-1911 | www.epdu.com

Eaton Rack Power Module

The Eaton Rack Power Module simplifies data center power distribution by delivering up to 36kW of power in a 3U cabinet. The module connects directly from a three-phase UPS or other utility source to power secondary power distribution devices. The RPM distributes power to 12 poles with completely customizable input and output configurations and voltages.

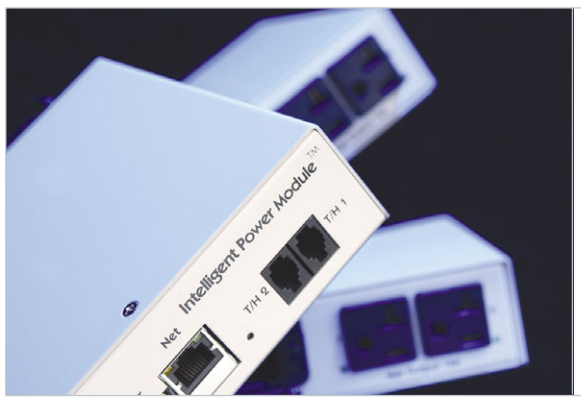
Best For: IT managers who need to closely monitor loads over the network.

- Provides plug-and-play primary distribution of power from a three-phase input source to secondary power distribution devices
- Serves data center loads with various voltages, power cord configurations, and layouts
- Distributes power to 12 poles, grouped into two sets of six poles, with choice of output receptacle types

$2,290 (800) 386-1911 | www.eaton.com/powerquality

PRODUCT SPOTLIGHT

Compiled by Tessa Warner Breneman



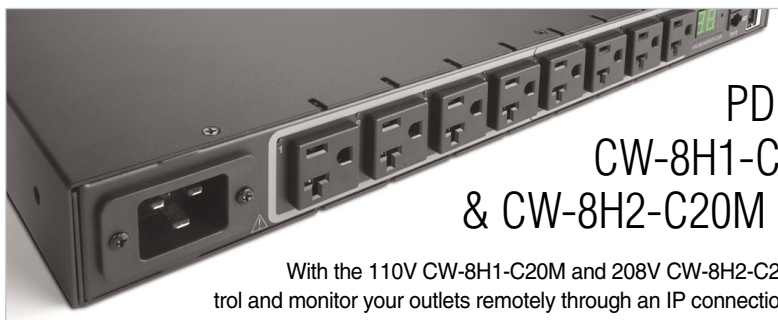
PDUs Direct CW-2H1-C20 & CW-2H2-C20

PDUs Direct's switched standalone PDUs, the 110V CW-2H1-C20 and the 208V CW-2H2-C20, are two-outlet rack-based PDUs that offer remote control and monitoring capabilities serially for out-of-band access or through an IP connection. The remote power management features coupled with the individual receptacles let you power off, power on, or reboot from anywhere through a secure Web interface, SSH, or out-of-band (dial-up) session. These two units are ideal for remote branch offices that house IT and network equipment and Wi-Fi networks that include several pieces of equipment located in different places.

Best For: Small to midsized organizations looking for an inexpensive power solution.

- Individual outlet control
- Environmental monitoring and control
- Industrial-grade outlets
- Steel-cased enclosure

$215 (CW-2H1-C20); $225 (CW-2H2-C20)
(888) 751-7387 | www.pdusdirect.com



PDUs Direct CW-8H1-C20M & CW-8H2-C20M

With the 110V CW-8H1-C20M and 208V CW-8H2-C20M, you can control and monitor your outlets remotely through an IP connection or serially for out-of-band access and enjoy the combination of power distribution and remote management. With the CW-8H1-C20M and CW-8H2-C20M, you'll also get power monitoring and environmental monitoring. The industrial-grade outlets provide multiple in-feed plug types and upgradable firmware for dependable power distribution. The CW-8H1-C20M and CW-8H2-C20M also let users reboot both single and dual power servers with just one command, and when power or environmental conditions surpass the maximum limit, users are warned through SNMP alerts.

Best For: Small to midsized organizations looking for a remotely controlled power unit.

- Individual outlet control
- Environmental monitoring
- Industrial-grade outlets
- Steel-cased enclosure
- Eight NEMA 5-20R outlets or eight IEC C13 outlets

$350 (CW-8H1-C20M); $360 (CW-8H2-C20M)
(888) 751-7387 | www.pdusdirect.com

PDUs Direct C-16V1-C20MX & C-16V2-C20MX

The C-16V1-C20MX and C-16V2-C20MX metered PDUs provide several in-feed plug types and a local amp meter for the 16 NEMA 5-20R or 16 IEC C13 outlets. These PDUs are designed to be mounted in the rear dead space in order to leave more space for equipment and ventilation. These devices also feature local LED input current monitoring, which lets you accurately measure the amps from the connected power circuit, safely maximize the load, and reduce the risk of overloads.

Best For: IT managers who need to save space for equipment and ventilation.

- Industrial-grade outlets
- Steel-cased enclosure
- Premium powder coat
- True RMS reading with input current monitoring

$225 (C-16V1-C20MX); $235 (C-16V2-C20MX)
(888) 751-7387 | www.pdusdirect.com

Raritan Dominion PX Intelligent Rack PDU

The Dominion PX Intelligent Rack PDU is designed to boost power efficiency in your data center and features remote outlet-level monitoring and management, remote power cycling, a user-friendly GUI, and 256-bit AES encryption. With the Dominion PX, you can address emergencies with remote serial and TCP/IP access to outlet-level switching, and you can plan capacity easier with the unit-level and outlet-level power utilization information.

Best For: Organizations needing an efficient power solution.

- Information is shown through an LED display on the devices and remotely via Web browser
- Precise, outlet-level access and control
- Supports advanced authorization options, such as outlet-level permissions and LDAP/S, RADIUS, and Active Directory
- Supports HTTP, HTTPS, IPMI, SMASH-CLP, SSH, Telnet, and SNMP

$649 (800) 724-8090 | www.raritan.com

Tripp Lite PDUMH20ATNET

The PDUMH20ATNET is a 120V 20A metered PDU system with an integrated automatic transfer switch that offers 16 outlets and a digital display to show the total PDU power consumption measured in amps. To guard against inrush-related equipment interaction during startup, the outlets are consecutively powered on at 250ms intervals when the PDU is first booted. Additionally, remote power monitoring and control is provided through an installed Web/network monitoring card, and the PDUMH20ATNET remotely displays the status of input power, load capacity, and outlet power status through a protected network or Web browser interface. Individual outlet control to boot and power down is provided as well as load ramping and shedding for automatic power management.

Best For: IT managers who need to control outlets individually.

- 1U rackmount PDU with digital current monitoring display
- 20A, 120V capacity with 16 NEMA 5-15/20R outlets
- Connects to NEMA 5-20R and locking L5-20R receptacle
- Built-in automatic transfer switch

$879
(773) 869-1111 | www.tripplite.com

Tripp Lite PDUMV20HVNET

The PDUMV20HVNET switched metered rack power distribution unit lets you monitor PDU power consumption and in-rack environmental conditions remotely, as well as power on and off, recycle, or lock out power to the individual receptacles. SNMP or Telnet interfaces provide access to switched PDU systems, and individually switched outlets are managed through the Web/network interface to allow for remote reboots of unresponsive network hardware. Proper operation of interdependent IT systems is guaranteed through user-defined power-up and power-down outlet sequences. This also protects against inrush-related overloads as units are turned on.

Best For: IT managers who need to remotely monitor PDU power consumption and in-rack environmental conditions.

- 208/230/240V, 20A maximum capacity (agency derated to 16A)
- Features C20 power inlet, detachable L6-20P input cord, and 24 controllable outlets (20 C13 and four C19)
- Protocols supported include HTTP, HTTPS, PowerAlert Network Management System, SMTP, SNMPv1, SNMPv2, Telnet, FTP, DHCP, BOOTP, and NTP

$1,032
(773) 869-1111 | www.tripplite.com

PRODUCT SPOTLIGHT

New VoIP Products & Tools

Avaya IP Wireless Phones

These phones let users tap into the wireless LAN to enjoy the benefits of VoIP without being tethered to a single location. The Avaya 3631, 3641, and 3645 are all standards-based phones that utilize the H.323 protocol.

Features include:
- 802.11b/g radio wireless LAN connectivity
- 802.11e QoS
- 802.11i security
- Rechargeable battery

Best For: Healthcare, retail, and manufacturing employees rarely at their desks and without a fixed location within the enterprise.

(866) 462-8292 | www.avaya.com

Avaya one-X Deskphone 9600 Series IP Telephones

Depending on the model you choose, the Avaya one-X Deskphone 9600 Series line of IP phones offers a range of features, including a large display, status lights and buttons, advanced IP telephony features, and large touchscreens.

Features include:
- Supports multiple adapters for adding functionality
- One-touch access to key functions
- Exceptionally clear audio performance
- Built on open standards

Best For: Nontechnical employees in enterprise, contact center, and branch office settings.

$370 to $840

(866) 462-8292 | www.avaya.com

Avaya one-X Deskphone 1600 Series IP Telephones

Avaya's 1603, 1608, and 1616 IP Telephones all feature a familiar interface and can be deployed in mixed environments or on their own. These phones are high-quality full-duplex speakerphones and support three-, eight-, or 16-line appearance/feature keys and the ability to display up to four lines.

Features include:
- Backlit displays and dual-lamp LEDs
- Support for multiple call appearances
- A two-way speakerphone
- Both softkeys and fixed feature keys

Best For: Basic communications of enterprise, contact center, and branch office users via H.323.

$139 to $355

(866) 462-8292 | www.avaya.com

Cisco MCS 7816-I3 Unified Communications Manager Appliance

The Cisco MCS 7816-I3 server appliance comes with Cisco Unified Communications Manager 7.0 preinstalled, delivering traditional telephony features and advanced capabilities such as mobility, presence, preference, and rich conferencing services.

Features include:
- Up to 30,000 users per cluster
- Centralized configuration and management
- Up to 100 appliances can be combined into a single system

Best For: Enterprises looking for voice, video, data, and mobile applications on fixed and mobile networks.

(866) 556-9087 ext. 4708 | www.cisco.com

Cisco Unified IP Phone 7975G

The Cisco Unified IP Phone 7975G end points support a standards-based (XML) application development environment and feature built-in on-screen user guides, audio and visual alerts, integrated Gigabit Ethernet, and wideband audio for unsurpassed clarity.

Features include:
- Support for iLBC
- Large backlit touchscreen color display
- Gigabit Ethernet connectivity
- Eight programmable keys and five programmable softkeys
- Support for XML applications and double-byte languages

Best For: Offices of executives or major decision makers, administrative assistants, and those working with bandwidth-intensive applications on colocated PCs.

(866) 556-9087 ext. 4708 | www.cisco.com

Cisco Unified IP Phone 7961G

The Cisco Unified IP Phone 7961G is ideally suited for managers that require the enhanced functionality of an IP telephony end point. This model supports both IEEE standard 802.3af inline power and Cisco inline power.

Features include:
- A higher-resolution, graphical 4-bit grayscale display (320 x 222)
- Support for XML applications and double-byte languages
- Gigabit Ethernet connectivity
- Six programmable feature buttons and four interactive softkeys

Best For: Offices of managers and administrative assistants.

(866) 556-9087 ext. 4708 | www.cisco.com

Multi-Tech MultiVOIP Voice/Fax Over IP Gateway

Multi-Tech's MultiVOIP gateway provides toll-free voice and fax communications over an enterprise's intranet or the Internet. This offering supports PSTN-quality voice and fax.

Features include:
- FXS/FXO and E&M connectors on each channel for direct analog connection to phones, key systems, PBX extensions, PSTN lines, or PBX trunks
- Ethernet connectivity
- Connects directly to phones, fax, or PBX
- Utilizes H.323, SIP, and SPP protocols

Best For: SMEs with multiple locations looking to reduce toll charges between frequently called sites.

$299 to $399 (1-port); $899 (2-port); $1,499 (4-port); $2,499 (8-port)

(888) 288-5470 | www.multitech.com

Multi-Tech MultiVOIP FX SIP Gateway

The MultiVOIP FX SIP gateway connects directly to phones, fax machines, communications systems, PSTN lines, or a PBX to provide real-time, quality voice connections to any office on a company's VoIP network.

Features include:
- Ethernet connectivity and full IP compatibility
- FXS/FXO connectors for direct analog connection
- Supports SIP for sending voice over the Internet and SIP supplementary services, including call forward, call transfer, and call hold

Best For: SMEs wanting to maximize the investments already made in data and voice network infrastructure.

$599 (2-port); $999 (4-port); $1,699 (8-port)

(888) 288-5470 | www.multitech.com

PRODUCT SPOTLIGHT

Compiled by Andrew Leibman

NEC Univerge SV8100 Communications Server

Designed to be both versatile and scalable for a company's growing business needs, the Univerge SV8100 Communications Server from NEC supports TDM, IP, video, wired, and wireless standards. The SV8100 offers three onboard applications that can be extended to branches and remote locations.

Features include:
- Converged communications: data, multimedia, and voice over one network
- Enhanced management
- Pure IP with the flexibility to support TDM
- Customizable advanced productivity applications and collaboration tools

Best For: SMEs looking for a robust, feature-rich, and scalable VoIP appliance.

(800) 240-0632 | www.necunifiedsolutions.com

NEC Univerge SV8500 Communications Server

The Univerge SV8500 is built using open standards, letting users leverage existing infrastructure. The offering can even utilize pre-existing centralized or distributed conferencing and trunking equipment for the organization's unified communications needs.

Features include:
- Flexibility through open standards
- New modular chassis and interface
- Extensive voice and IP features
- Complete interoperability with existing NEC systems

Best For: Enterprises looking to set up a pure IP or converged hybrid network.

(800) 240-0632 | www.necunifiedsolutions.com

Nortel IP Phone 1110 Series

The IP Phone 1110 is a single-line, standard-level desktop IP phone that utilizes an integrated IEEE 10/100 switch to connect to Nortel Communication Servers, PC traffic, and a variety of business telephony applications.

Features include:
- Fully backlit monochrome 143- x 32- pixel display with antiglare screen
- Eight fixed keys and four context-sensitive softkeys
- Integrated Ethernet 10/100BaseT switch with LAN and PC autosensing ports
- IEEE 802.3af Power over Ethernet and local AC power options
- PVQM (Proactive Voice Quality Management) for enhanced administration and diagnostics

Best For: Basic communications of enterprise, contact center, and branch office users.

(800) 466-7835 | products.nortel.com

Nortel IP Phone 2000 Series

Nortel's IP Phone 2000 Series desksets are available in standard, intermediate, professional, and advanced models that fit the IP communication needs of enterprises of all sizes and users at all levels.

Features include:
- Single- and multiple-line models available
- Expansion modules offer additional line/features keys
- Integrated 10/100 switch
- Large color touchscreen display (IP Phone 2007 only)

Best For: Users looking for the next-generation features of IP telephony and the carrier-class reliability and ease-of-use of a traditional telephone.

(800) 466-7835 | products.nortel.com

Polycom SoundStation IP 7000

The Polycom SoundStation IP 7000 advanced IP conference phone integrates with Polycom's HDX Video Conferencing Systems and supports Polycom HD Voice technology and integrated Power over Ethernet, and it works with leading SIP-based IP PBX and Softswitch platforms.

Features include:
- Up to 20 feet of 360-degree microphone coverage
- Resists interference from mobile phones
- Optional expansion microphones for greater range
- Connect two units to cover larger conference rooms

Best For: Medium-sized and larger conference rooms that require a system with superior voice quality and clarity.

$1,339

(800) 765-9266 | www.polycom.com

Polycom SoundPoint IP 670

The Polycom SoundPoint IP 670 is a premium SIP desktop phone that utilizes a color display and offers a quality audio, visual, and applications experience for end users and administrators.

Features include:
- A large, vibrant color display
- Polycom HD Voice technology
- Six lines in standalone mode
- Built-in USB port and Gigabit Ethernet switch

Best For: Executives and those needing a high-performance, application-enabled desktop phone with a color display.

$629

(800) 765-9266 | www.polycom.com

Polycom VVX 1500

The Polycom VVX 1500 adds crystal clear video to the host of features and capabilities you expect from a fully featured IP business phone. The offering supports multiple hosted or premise-based call control solutions through the Polycom VIP program.

Features include:
- Color touchscreen interface for voice, video, and applications
- Six-line, feature-rich phone with Polycom HD Voice
- Highly customizable applications platform with open Polycom XML API, integrated microbrowser, and USB 2.0 for applications
- Includes productivity and personalization applications, including Polycom Productivity Suite, Polycom My Info Portal, and Digital Photo Frame

Best For: Executives and line-of-business workers looking for enterprise-grade telephony, one-touch video communications, and integration with key business apps.

$1,099

(800) 765-9266 | www.polycom.com

Toshiba Strata CIX200 IP Business Telephone System

The Strata CIX platform gives users the option to create a pure IP system or a converged communications system as needed. Toshiba's Strata CIX200 supports up to 96 trunks or 160 telephones and combinations up to 192 total.

Features include:
- Multiple Strata CIX systems can be networked together
- Voicemail and auto attendant of four, six, or eight ports
- Advanced voicemail applications can be added to fit your business needs
- Fully upgradeable, protecting your technology investment

Best For: Home offices, startup locations, branch offices, or onsite at customer locales.

(800) 222-5805 | www.telecom.toshiba.com

Toshiba IP 5000 Series Business Telephones

Toshiba's business telephones make built-in advanced features easy for even novice users to access and utilize. Toshiba IP 5000 Series phones include integrated Gigabit Ethernet switches, full-duplex speakers for superior sound, and HTML and Java support with customizable applications.

Features include:
- Large, backlit display
- Low-profile design and tilting base
- On-screen user guide
- Multiple programmable buttons

Best For: Home offices, startup locations, branch offices, or onsite at customer locales.

(800) 222-5805 | www.telecom.toshiba.com

Avoid Renovation Woes

Continued from Page 1

decision to come as a surprise," says Nik Simpson, senior analyst with Burton Group. "They need to be planning well ahead of actually requiring this sort of thing. If it comes down to an emergency situation, then they could be in real trouble."

Failing To Calculate Updated Power & Cooling Needs

New and updated equipment can completely upset the delicate balance of heating and cooling in a facility. Thanks to virtualization and consolidation, data centers are becoming home to increasingly dense equipment such as blade servers and clustered storage. As data center facilities get rid of bigger, obsolete equipment, managers shouldn't be fooled into believing that a lot of excess floor space makes power and cooling issues less likely. If anything, the reverse is true.

For every piece of new equipment to be introduced during a renovation, SMEs should calculate the equipment's unique power requirements as well as its thermal profile. Work with the facilities department to ensure inbound power is more than sufficient to handle the anticipated post-renovation loads. Engage cooling experts to conduct a computational fluid dynamics analysis on the proposed facility layout to avoid hot spots and other problem areas.

Pay attention to changes in the underfloor environment, as well. As equipment is removed, make sure its associated cabling is also removed to avoid giant knots of cabling that can adversely affect airflow. Update the positioning of blanking panels on floors and racks to maintain peak airflow efficiency and minimize mixing.

"You really have to understand consumption of energy and cooling and match that up with plans for growth," says Burton's Simpson. "This allows you to get ahead of any data center facility requirements and methodically plan for what lies ahead."

Taking Virtualization Too Far

Virtualization is currently at the root of so many data center renovation projects because its ROI is undeniable. By taking advantage of otherwise unused compute capacity and allowing data center managers to consolidate equipment and reduce related administrative overhead by managing less hardware, virtualization has become a popular driver of efficiency. Bad planning, however, can leave gaping holes in backup and disaster recovery plans.

"So you don't shoot yourself in the foot, pay attention to how you're doing this," says Michael Lazar, federal technology director for GemStone (www.gemstone.com). "We've seen cases where customers virtualized themselves either with disk or processing such that virtualized and backup processes were running on the same physical machine. So if computer A crashed, they would lose not only the process, but the backup."

Lazar says similar pitfalls await managers who over-virtualize disk-based storage. The risk here is production and backup databases residing on the same physical disk. The solution is to incorporate backup and disaster planning at the earliest planning stages to make sure equipment that's being brought in as part of a facility renovation doesn't needlessly introduce this form of risk. Systems architects should be trained to ask these specific questions during the data center redesign process, and project plans should incorporate these checkpoints, as well.

Not Updating Critical Alarm & Monitoring Systems

Sensors and other critical elements of environmental controls may need to be recalibrated or replaced entirely after major changes have been made to the facility. Failure to address this could result in a costly lesson in the event of an actual emergency.

If the data center is located in a building alongside other corporate offices, partner with the facilities department to ensure that data center-focused systems connect directly to those covering the entire building. Even in a standalone data center, tap into facilities personnel expertise to ensure that no gaps in disaster preparedness are missed.

"The first thing I'd want to have in place is some kind of alarm system that detects when the air conditioning is not running, when there's water or smoke inside the room, or [when] the ambient temperature is not out of range," says Robert Atkocaitis, national accounts manager for Atlas Sales & Rentals (www.atlassales.com). "There are some equipment manufacturers that make units specifically for data centers that have all these bells and whistles and tie into building controls." P

Top Problem: Failing To Communicate

Although IT typically makes minor modifications to data center infrastructure without advising stakeholders such as the CIO and business leaders, more major changes requiring system outages that may affect delivered service require a different approach. Data centers that support primarily external audiences accessing Web-based systems are particularly sensitive to inadequate communication surrounding service outages.

Build a communications plan that specifically articulates what activities do and do not merit prerenovation outreach to stakeholders. Document all communication processes to be followed when data center renovations could potentially affect service and monitor their impact to ensure no one is surprised. Failure to tie effective communications into renovation plans could result in heavy inbound call volumes to the help desk and reduced end-user and customer satisfaction scores.

Is The Turnaround On Its Way?

Continued from Page 1

focus across all of IT on operations spending and mission-critical tasks. Joe Skorupa, research vice president of enterprise network services and infrastructure at Gartner, says he has seen a tighter scrutiny of spending, especially in networking, and a close examination of pricing that has led to cost reductions. He says, even with the possibility of a turnaround in sight, one of the grievous errors in IT is to buy what sales vendors say is the right thing to buy and letting vendors drive business decisions.

Instead, Skorupa says IT should "stay closely aligned to the needs of the business and understand what business initiatives are critical to driving the company forward and be prepared to support those." That way, when the turnaround occurs, IT will be prepared to keep matching business needs with new technologies and expanded services that are required to meet new business needs.

Skorupa also advises, as a company prepares for and expects a turnaround, to refocus on process improvement, team training, and the core factors inside a data center, such as buying back-panels for cabinets, moving to hot-aisle and cold-aisle configurations, and other energy efficiencies that can reduce costs. Even low-tech functions—which don't cost any capital outlay—such as cleaning out under the floors and improving airflows are good tasks for IT to perform in preparation for a turnaround. That way, when a boon in the economy does hit, those areas will be taken care of.

James Paddon, consulting services director at JGI (www.jginfo.com), a management consulting company, says that one factor to consider in preparing for an economic rebound is that many projects have been backlogged and will likely move to the forefront, so it is important to prepare IT services as these projects begin to ramp up. Paddon says he has seen clients already starting to prepare for a turnaround and that there is a distinct advantage in preparing for an economic resurgence.

"Also, as long as the recovery is in its very early stages, there are still significant opportunities to get excellent pricing and discounts from suppliers, and IT managers should remember that these are unlikely to continue once the recovery is fully underway," says Paddon.

What If A Turnaround Does Not Occur?

Rob Enderle, an analyst with Enderle Group, says IT should "set up and ensure contingencies" no matter what happens in the economy. Enderle says this will mean examining the sales cycle in the business and planning to increase IT resources and infrastructure plans to meet demands, instead of being caught off guard, but still running lean as the economy has dictated for the past year or so.

In some ways, the advice for IT spending when a turnaround is not expected is to be even more vigilant about extraneous expenditures and focusing more on operations, because the underlying framework for the business will be even more critical if the economy continues to slide.

"For less optimistic organizations, focusing on strategic solutions with long-term technical and capital expenditure and operational expenditure benefits is critical," says PUND-IT's King. "What money they do spend needs to go to products that deliver the biggest business/financial bang for the buck. For example, if they haven't investigated or invested in server virtualization/consolidation, now would be a good time to do it. The main thing is to ensure that lines of communication between management remain open. Even in tough times, technology plays a critical role in the vast majority of business processes so it's critical for IT to have the support it needs to support the greater organization." P

Is A Rebound Really Coming?

Tsvetan Kintisheff, an economist with Kintisheff Research, says that IT should expect a plateau period as the global economy has, as he says, "apparently hit bottom." The keys to planning budgets, he says, are to rely on excellent management, to weigh the benefit of adding capabilities now that will help prepare the company for growth, and to control costs, especially when it comes to "free cash flow" (an economic term that means cash on hand after paying expenses).

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www.upsitetechnologies.com

It's About More Than Plugging Cable Openings

Most cost-minded data center managers realize that the best practice of sealing cable openings not only helps achieve cooling and airflow efficiencies, but greatly reduces operating and capital expenditures. In fact, sealing even the smallest of cable openings helps manage thermal and airflow challenges for total data center optimization. Upsite Technologies expanded the KoldLok® family of engineered sealing solutions with the KoldLok Mini Raised Floor Grommet to help the data center industry optimize their cooling and airflow power, and maximize their costs.

Designed with virtually all of the original KoldLok features, the fire-rated KoldLok Mini Raised Floor Grommet at 4 x 6 inches (100 x 150 mm) is engineered to be the most effective and smallest sealing solution available.

"The KoldLok Mini Grommet is designed to meet smaller cable opening standards specified in new builds, and works well in retrofits. What conscientious data center managers realize is sealing even a small opening can have a positive effect on existing cooling unit capacity," says Michele Galleazzi, KoldLok Product Manager at Upsite Technologies. "The KoldLok Mini provides a low-cost-of-entry way to optimize airflow immediately and save money in the long term."

Proof is evident for many satisfied data center managers worldwide. In a financial impact study conducted in a 10,000 ft² computer room with 400 KoldLok Grommets installed, simple OpEx payback occurred within the first two months, there were annual OpEx energy savings of $50,896, and one-time cooling unit CapEx savings of $90,000.

"After extensive research in the field, we discovered that our data center customers require more varied and flexible solutions to treat multiple cable opening sizes," says Peter Crook, Vice President of Business Development. "We're excited to help data centers lower data center energy costs and execute their energy efficiency initiatives with the KoldLok Mini."

Upsite has established itself as the organization that produced the original research, along with the Uptime Institute, about the true causes of lost and wasted energy use. Upsite was the first to offer the engineered solution to solve this challenge and continues to research cost efficiencies in the data center. Over the years, Upsite's studies have revealed that the reliability, availability, and economic well-being of the data center are at risk, and that the industry will continue to suffer without well-engineered solutions. Many, if not all, of the products now offered in the marketplace are based on the collaborative research that originated with Upsite and the Uptime Institute.

As the most effective sealing solution chosen by many Fortune 100 companies worldwide, the KoldLok Raised Floor Grommets, now including the KoldLok Mini, offers a versatile suite of proven products:

- KoldLok Mini Raised Floor Grommets seal smaller openings in new data centers that have multiple cable opening sizes, and offer a handy way to split power and data cabling.
- KoldLok Surface Mount Raised Floor Grommets can be used for retrofit projects to seal a variety of existing raised-floor tile cutouts and allow the flexibility of removing tiles without capturing cables.
- KoldLok Extended Raised Floor Grommets seal a variety of existing larger openings along the wall, with the added flexibility of modification for unique openings.
- KoldLok Integral Raised Floor Grommets seal cable openings in new raised-floor systems prior to the installation of communication or power cabling.

With its engineered design and proven history in reducing infrastructure costs, the KoldLok family of products has an immediate impact on cooling capacity optimization; and in the long-term, lowers TCO and reduces carbon footprints. Large, successful companies cannot tolerate unreliability, downtime, or the high energy costs associated with inferior solutions in their data centers. With KoldLok products, leading companies get proven raised-floor sealing solutions requiring no maintenance and continue to save costs.

How does the expanded KoldLok family of sealing solutions achieve this? All KoldLok products offer a virtually perfect seal, which can significantly increase existing cooling unit capacity by enabling more effective delivery of cooled air to IT equipment air intakes. The installation of KoldLok products helps reduce the need to purchase additional cooling units. Their effectiveness, durability, low maintenance, and adaptability to a wide variety of cable opening configurations have established the added value of the KoldLok sealing solutions in the industry, especially for reducing infrastructure overhead and cutting cooling costs. After witnessing the results of the KoldLok product seal, it's clear that it's about much more than just plugging cable openings. P

Before: Real air-intake temperatures in an actual data center before installing KoldLok products

Before KoldLok products were installed, a foam product was used to plug holes and fans were used to cool the computer room. Temperatures reached 94°F, 13+ degrees higher than is recommended by the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE).

After: Real air-intake temperatures in an actual data center after installing KoldLok products

After KoldLok products were installed, virtually all temperatures dropped below the recommended 80.6°F, resulting in increased cooling optimization and greater overall data center efficiency.

Amadeus Optimizes Cooling in the Data Center with KoldLok Solutions

Amadeus Data Processing GmbH is responsible for the travel booking experience of customers from more than 90,000 travel agencies and online portals. The Amadeus data center is one of the largest data centers in the world. Inconceivable volumes of data are managed here—more than 480 million transactions a day and more than 3 million net bookings per day.

"In view of these facts, it is quite easy to imagine what high availability means for us, and especially for our customers," says Matthias Koll, Infrastructure Manager at Amadeus. "Our systems have to be up and running—without ifs or buts, and at all times."

The Cooling Problem

It turns out Amadeus had hotspots. In the worst case, hotspots can overheat servers, making them prone to malfunctions and downtime. While some might try to prevent such a high cooling loss by increasing the output of the air conditioning machines, this consumes a considerable amount of energy. If the cooling capacities cannot be optimized, this can also mean a costly investment in additional cooling systems, which take up valuable space in the data center.

"In the past, the conditioned air came out in places we did not intend, including cable openings in the raised floor. We had tried as much as possible to cover these with lead mats, but the low level of effectiveness made considerable optimizations an urgent necessity."

The KoldLok Installation

To tackle the obvious cooling problem, Mr. Koll and his team launched a search for a relevant sealing solution, and were rather surprised that there was only one supplier of engineered sealing systems that fulfilled his requirements—KoldLok® Raised Floor Grommets.

Today, there are approximately 130 KoldLok products in use at Amadeus. Not only has this meant that all data traffic can be processed in a well-cooled, reliable environment, but the economic benefits just keep giving. Within a year of the initial KoldLok installation, the data center was able to achieve energy savings in data center cooling of more than $64,156, and simple payback occurred in just three months.

Koll sees the greatest benefit, though, in the fact that he does not need to purchase any additional cooling systems. "Since Amadeus, as a service provider, also offers hosting for the outsourced IT of its commercial customers, each square meter of saved space means more room for computer capacity, and therefore an increase in our own economic efficiency."

Finally, the KoldLok installation means that all data traffic can be processed in a well-cooled environment. This is especially advantageous to travelers, who can continue to relax, take it easy, and book their trip online without interruptions.

Upcoming IT Events

For more Upcoming IT Events, see page 3.

AITP Cornhusker
"Connecting IT & People" Seminar
Sept. 17, 8:30 a.m.
SCC Continuing Education Center
Lincoln, Neb.
www.aitpcornhusker.org/uploads/2009_Seminar_Flyer.pdf

• • • • •

AITP Greater Boston
Sept. 17
www.bostonaitp.org

• • • • •

AITP Omaha
Sept. 17, 5:30 p.m.
Seraph Corp.
Omaha, Neb.
www.aitpomaha.org

• • • • •

AITP Tarheel
Sept. 17, 6 p.m.
Foothill Brewery
638 W. 4th St.
Winston-Salem, N.C.
www.aitp.org

• • • • •

Boston Society for Information Management
Sept. 17
www.simnet.org/Chapters/Northeast/Boston/tabid/78/Default.aspx

• • • • •

Tech Execs Network | CIO Panel Forum
Sept. 17, 8 a.m.
The Metropolitan Club of Chicago
Chicago, Ill.
www.techexecs.net/chicago.htm

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ISSA Upstate SC
Sept. 18, 11 a.m.
NuVox
301 N. Main St., Suite 5000
Greenville, S.C.
www.upstate-issa.org/index.htm

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AITP Pittsburgh
Sept. 21, 6 p.m.
Sokol Club-Southside
2912 E. Carson St.
Pittsburgh, Pa.
www.aitp-pgh.org

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AITP Akron
Sept. 22
www.akron-aitp.org

• • • • •

AITP Long Island
Sept. 22
www.aitp-li.org

• • • • •

ISSA Baltimore
Sept. 23, 4:30 p.m.
Sparta Inc.
7110 Samuel Morse Drive, Suite 200
Columbia, Md.
www.issa-balt.org

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Tech Execs Network | CIO Panel Forum
Sept. 23, 8 a.m.
NetApp
Sunnyvale, Calif.
www.techexecs.net/siliconvalley.htm

• • • • •

Tech Execs Network | CIO Panel Forum
Sept. 24, 9:30 a.m.
CoreSite Wilshire Annex Data Center
Los Angeles, Calif.
www.techexecs.net/losangeles.htm

- OCTOBER -

Data Center World
Oct. 4-7, 2009
Orlando, Fla.
www.datacenterworld.com

- DECEMBER -

Gartner 28th Annual Data Center Conference
Dec. 1-4
Las Vegas, Nev.
gartner.com/us/datacenter

For more than 27 years, the Gartner Data Center Conference has provided data center professionals real-world perspectives, tactics, and strategies to keep their operations running at peak performance. Our seven-track agenda drills down on servers and storage, TCO and IT operations excellence, aging infrastructures and the 21st Century data center, next-stage virtualization, consolidation, workload management, procurement, and major platforms.

Virtual Reality

Avoid The Stumbling Blocks To A Successful Virtualization Implementation

by Elizabeth Millard

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Key Points

- Perform a power and cooling assessment before embarking on virtualization.
- Create a holistic data center view with an integrated system between facilities and IT management.
- Consider virtualized desktops for greater savings.

Every strategy has its potential missteps, and virtualization can be such a far-reaching effort that it tends to affect most aspects of a data center. Here is a look at some common virtualization mistakes and how to keep from repeating them.

Not Considering Virtualized Desktops

In addition to network efficiency, virtualization can be a boon for reducing energy usage, notes Kris Domich, principal consultant for Dimension Data (www.dimensiondata.com), and where that's most dramatic is on the desktop level.

A typical workstation that's moderately equipped to handle most business functions, such as email and Web browsing, is configured with an average of 300W maximum power. But, Domich notes, the vast majority of these workstations will never consistently consume that amount of power and are often left on during off hours, which means enterprises are paying for power without getting any business value in return.

By contrast, a virtual desktop terminal consumes about 30W, with little fluctuation during varying usage patterns. That could represent an 80% reduction in power costs per workstation.

Domich says, "A no-brainer for reducing power usage across the enterprise—as opposed to just in the data center—is implementing virtualized desktops, which helps companies free up resources, improve manageability and security, and realize dramatic energy and cost savings."

This type of effort requires a deeper level of strategy and implementation and will involve up-front training costs and more planning. But considering its benefits, many data center managers may find that it's worth the extra work.

Skipping The Power & Cooling Assessment

Another area that tends to get overlooked, Domich adds, is an assessment of power and cooling requirements before virtualization is undertaken.

As with any major technology change, the data center's requirements will shift, and looking at power and cooling after virtualization is underway could lead to the need for different configuration tactics. That, in turn, sometimes means more time and money, eating into the ROI benefits of virtualization.

Special consideration must be given to the target platform in order to determine the changes in heat dissipation that come from replacing servers of one density with another, Domich notes.

"Depending on the target consolidation platform, additional cooling may be required, or possibly a change in the way cold air is delivered and how hot air is evacuated from the data center," he says, adding that it may need to be done on a rack-by-rack basis or throughout the data center.

By assessing power and cooling first before implementing server consolidation, companies may avoid having to retrofit or re-engineer their data centers' environmental systems down the road, Domich says.

Creating A Piecemeal System

After the assessment comes the move toward implementation. Integration is key when developing a virtualization strategy, particularly related to power and cooling, says Chris Davis, global business development manager of data centers and hospitality for TAC (www.tac.com), a provider of building automation solutions.

Many times, facilities and IT assets are not well integrated and lack a common view of energy, he notes. Historically, there has been limited real-time monitoring of energy across IT, white space, power, and the building, Davis notes: "Power and cooling metrics are not integrated with IT to control energy in the context of maintaining IT gear and processes. The IT service management tools are not energy-aware."

To address the types of issues that Davis points out, there needs to be integration among different components, including IT asset/service management software; a power monitoring and control system for the electrical distribution infrastructure with branch circuit monitoring; a white space management system with capacity planning and change management tools; and a building management system that monitors the building infrastructure, controls systems such as HVAC, and functions as an integration platform for the other systems.

"By sharing relevant data across systems, both facilities and IT management can gain a holistic view of the center," notes Davis. Without this view, a virtualization play may sputter when it comes to provisioning machines within the white space, he says.

Overlooking Naming Conventions

There are many exciting aspects to virtualization, but naming conventions and how they're grouped aren't likely to get any pulses racing. However, there are a number of items where there's a need to have names populated for configuration, operations, and maintenance management, says Glen Siemetz, senior director of data center strategy and portfolio for Siemens IT Solutions & Services, a business unit of engineering firm Siemens AG (www.siemens.com).

Some VMware examples, he notes, are Vendor, Host Server, Owner, and Support Group. These names will be used in a number of different management applications with future moves, expansions, and changes constrained by groups of pooled resources.

"As a result, how you name and group items like 'owners,' for example, is extremely important," says Siemetz. "It's the pooled resources used by virtual machine owners that will guide how you manage resources in the present and future. Pooled resources will drive everything you do."

Virtualization will have many overlays in vSwitches, NIC port groups, VM owners, pooled resources, and security zones, Siemetz says: "This new virtual world will be more driven by policies rather than by the old physical world constraints. Therefore, you have to lay out the layers of relationships as well as the resources you are trying to manage in the virtual infrastructure."

Top Mistake: Not Getting C-Level Buy-In

Virtualization can be a sweeping change, and although IT will do all the work, including training, implementation, and purchasing, the department still needs to connect with the CEO, CFO, and other top executives about what the change will entail.

Learn to speak executive for this one: Develop a presentation that is free from technical language and clearly articulates the cost benefits. Also, be realistic in estimating ROI and potential downtime. Making sure that all departments are aware of changes and their necessity before implementation can prevent headaches later.

"A no-brainer for reducing power usage across the enterprise—as opposed to just in the data center—is implementing virtualized desktops, which helps companies free up resources, improve manageability and security, and realize dramatic energy and cost savings."

- Dimension Data's Kris Domich

Storage Network Snags

Setting Up Storage Networks Comes With A Host Of Potential Complications To Avoid

by Sandra Kay Miller

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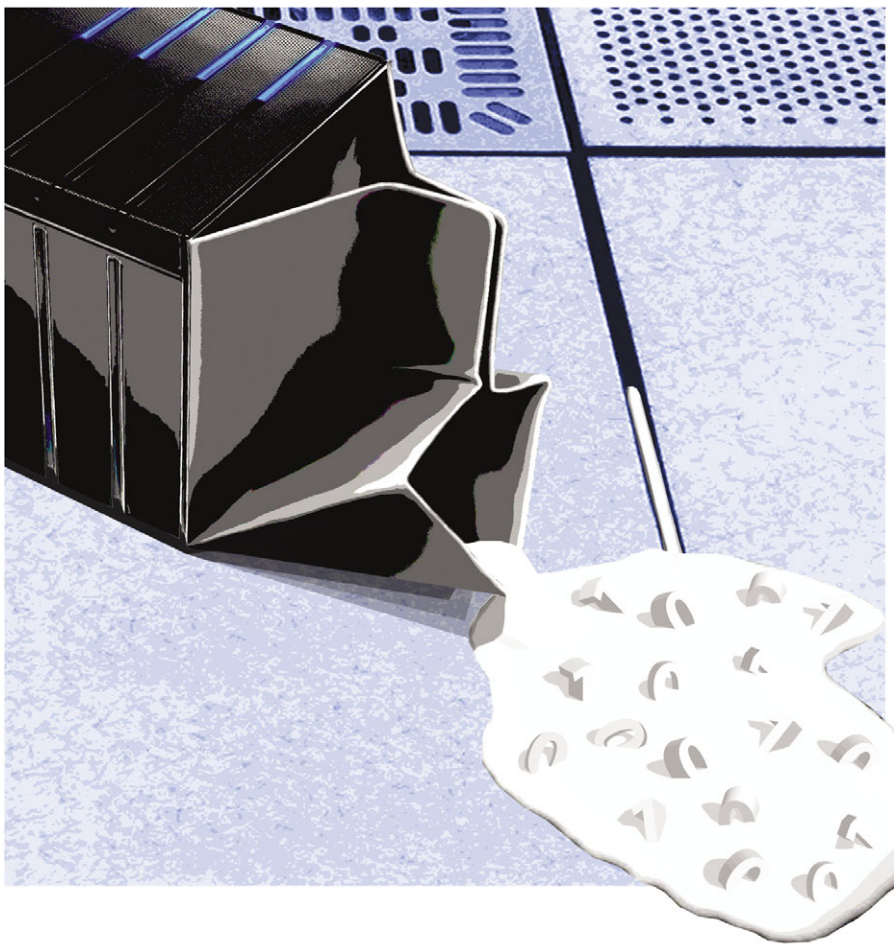
With the growth of Web-based applications, automated content, email, and online media such as music and video, organizations are increasingly turning to storage networks. Despite the economic downturn, storage purchases continue to grow. According to Donna Taylor, principal research analyst for Gartner's global Storage Quarterly Statistics program, technologies for network-based storage posted an 11.3% increase from 2007 to 2008.

Greg Schulz, storage industry analyst at StorageIO and author of "Resilient Storage Networks: Designing Flexible Scalable Data Infrastructures," points out in his book that storage networks come in all shapes and sizes and utilize a variety of technologies.



"Regardless of what type of technology you choose to deploy, a resilient storage network environment should be able to efficiently deliver data to meet the demands of your business," says Schulz.

In order to help you create a resilient storage network, here is a look at some of the most common mistakes and how to avoid them.

Too Little Storage

Once the decision has been made to implement or upgrade a storage network, the first question is often, "How much more storage do we need?" Steve Allen, president of Integrated Technology Systems NYC (www.itsnyc.com), uses a factor of eight when designing a scalable storage network—assuming, for example, that if an enterprise needs 10TB of storage now, it should plan for 80TB in its upgraded network to allow for future growth.

"A few years ago, businesses estimated that their storage needs would, at the most, quadruple over the next two to three years, but with the dependence on email and the growth of digital content, it's just gone through the roof," says Allen.

In addition to capacity, IT shops need to be certain that the network storage technology they choose can scale to their potential needs and be easily (and feasibly) upgraded.

Failure To Manage

Larger enterprises taking advantage of complex storage-area network technologies and storage virtualization need to include some type of provisioning and capacity management system.

Provisioning storage can be a monotonous process for administrators. It's an ugly task, but it's necessary to ensure the optimized performance of networked storage. To make it easier, consider solutions that have integrated auto-provisioning capabilities.

SANs and virtualized storage are often composed of software and hardware from multiple vendors. Look for solutions that offer a single point of administration at the logical or virtual layer. This will also aid in another pain point often encountered in storage networks: data migration and disaster recovery between heterogeneous platforms.

Besides managing storage space itself, the data and information life cycles are commonly overlooked. "Unnecessary data taking up space on a storage network is money down the drain," says Stewart Buchanan, research director for the IT Asset Management and Procurement group at Gartner.

By using an automated policy-based method for determining how long data resides on networked storage, organizations can save money by migrating noncritical data to slower or less expensive media, such as tape. Applying policy to data storage also decreases liability, especially for those bound by regulatory compliance laws such as Sarbanes-Oxley and HIPAA, which have very specific criteria for the storage of information.

Multiple Copies

When using networked storage as a method of backup, it's easy to save the same data over and over, thus chewing up valuable resources on the network. To reduce the amount of storage utilized by backup data, consider a data deduplication solution.

Many major vendors are integrating data deduplication technologies into their products. Advantages include a significant reduction—as much as 90%—of bandwidth to transfer to remote sites, quicker backups, and the reduction or elimination of tape, all of which translates into lower operating costs.

Overloading The Network

Thanks to advances with iSCSI, storage networks have become affordable and popular with small to midsized enterprises. Unlike Fibre Channel, iSCSI allows data to be transmitted over traditional IP networks with no specialized cabling.

However, according to Ali Asvadi, founder and president of Variel Technology (www.variel.com), "There's a lot more to iSCSI storage networks than just running over Ethernet."

Asvadi points out that although using existing infrastructure may appear to be a cost-effective solution, older hardware such as routers, switches, hubs, and lower-grade cables may not be able to bear the load when combined with an already taxed backbone.

To circumvent this common mistake, Asvadi suggests separating storage network traffic from the LAN onto separate subnets or VLANs with gigabit-speed throughput capacity. P

Key Points

- Management tools and applications are key to a successful storage network.
- Use deduplication technology to avoid the drain on resources caused by saving the same data multiple times and segregate storage networks from regular LAN traffic to optimize performance.
- Storage networks are subject to the same types of intrusions, malicious attacks, and human errors experienced by traditional networks.

Top Problem: Overlooking Security

Storage networks are subject to the same vulnerabilities and attacks hampering IP networks, including denial-of-service, hacking, malicious code, and data theft. In addition to external attacks, storage networks can be breached internally either accidentally or intentionally.

In light of the risks, it is critical to build security into the system from the very beginning. Here are three simple methods that can be used individually or together to strengthen the storage network.

- Access control: Limits the users or systems that have access to the storage network or the data.
- Authentication: Confirms/rejects users or systems based on authentication via the network.
- Encryption: Translates data into an unreadable code based on an algorithm and key. Can be used for data traveling across the network or in storage.

"There are several simple practices that companies can implement that help mitigate the risk of internal security risks," says Marc Randall, senior vice president of products at Brocade (www.brocade.com). "Create individual storage areas for data that needs different levels of security, pay attention to changes on the network using existing log streams, and spread administrative responsibilities between multiple administrators. No single person should have total access and control to the storage network."

News

Cybersecurity Report Stresses Need To Grow Federal Workforce

The U.S. government won't be able to combat major cybersecurity vulnerabilities "without a more coordinated, sustained effort to increase cybersecurity expertise in the federal workforce." That's according to a new national "Cyber IN-Security" report stemming from studies and interviews the Partnership for Public Service and consulting company Booz Allen Hamilton conducted on 18 federal agencies and with federal and nonfederal government officials.

The report lists four cybersecurity-related challenges facing the government, including a shortage of qualified federal cybersecurity workers. Only "40% of CIOs, CISOs, and IT hiring managers are satisfied or very satisfied with the quality" of federal cybersecurity job applicants, the report states, and just 30% are satisfied or very satisfied with the number of qualified candidates applying. Further, "no government-wide feeder program exists at all," resulting in a lack of development of trained federal IT experts as well as shortages in the public and private sectors. Other challenges cited include fragmented governance and uncoordinated leadership, complicated processes and rules hindering hiring and retention efforts, and a disconnect between front-line hiring managers and government HR specialists.

The report follows the Obama administration's "Cyberspace Policy Review" and President Obama's announcement to appoint a still-unnamed national cybersecurity coordinator. Recommendations contained in the report include putting a strong national focus on recruiting, training, and retaining cybersecurity experts; encouraging U.S. citizens to develop tech skills; and Congressional funding for scholarships and training federal workers in cutting-edge technology.

Better Personnel Training Needed

Larry Clinton, Internet Security Alliance president and CEO, and Dale Curtis, Business Software Alliance vice president of communications, agree about the need for greater efforts to develop personnel to combat ever-increasing cybersecurity threats. "Other major nations are doing a far better job at developing human resource capital in cybersecurity," Clinton says. "China in particular is treating young cyber students the way a lot of people treat young athletes—aggressively finding children at early ages with talent in this area and nurturing them in the same way they nurture Olympic athletes."

Curtis says the BSA has long advocated for increased funding and public-private partnerships to attract more teachers and students in the areas of science, technology, engineering, and mathematics. The BSA has also "advocated for immigration reforms that would help attract and retain highly educated individuals to our nation, instead of educating them here and sending them back home to our economic competitors," he says.

"It's not just the federal government that has a challenge in recruiting top cyber talent; this is a critical challenge in the private sector, as well," Curtis says.

by Blaine Flamig

News

Panel Overturns Brocade Chief Exec Backdating Conviction

A federal appeals court upended the conviction of Brocade's former CEO Gregory L. Reyes due to misconduct by trial prosecutors. He was convicted of 10 criminal counts, including illegally backdating stock options, conspiracy, and fraud. Although the panel of the U.S. Court of Appeals in San Francisco has overturned Reyes' conviction, prosecutors could either request a retrial with a larger appeals panel or drop charges altogether. The appeals court upheld the conviction of Stephanie Jensen, Brocade's former vice president for human resources, but ordered that Jensen be resentenced. Jensen was convicted of assisting in the illegal backdating and originally fined $125 million and sentenced to a four-month prison term.

Google's Gmail Continues Upward Climb

According to recent data from Web tracking company comScore, Google's Gmail is now the third most popular email service in the United States based on Web traffic to the site. From July 2008 to July 2009, Gmail's unique monthly visitors leapt from 25.3 million to 36.9 million, while monthly visitors to AOL's email service dropped from 45.1 million to 36.4 million. Yahoo! Mail holds a dominant position as the leading free email service, with its traffic for the same time period growing 22%. In July 2009, Yahoo! Mail had 106.1 million unique visitors. Windows Live Hotmail ranks as the second leading email service in the United States, although estimates cite that if current trends continue, Gmail could pass Hotmail within seven months. During the July 2008 to July 2009 stretch, Windows Live Hotmail's traffic climbed 3%. For July 2009, the service had about 47.1 million unique visitors.

Netscape's Andreessen Backing New Web Browser

Marc Andreessen, who recently announced the launch of a new venture investment company called Andreessen Horowitz, is reportedly backing an effort from RockMelt to develop a new Web browser. RockMelt's founders, Eric Vishria and Tim Howes, formerly worked with Andreessen at Opsware, which HP bought in 2007. Howes reportedly also worked with Andreessen at Netscape. Andreessen famously founded Netscape and is credited with helping to develop the first mainstream Web browser, Netscape Navigator, in the early 1990s, only to see Microsoft's Internet Explorer gain almost complete dominance of the market years later with a 90%-plus share. Although not much is known about RockMelt's browser's development, there is speculation it may tie in with Facebook, for which Andreessen serves as a board director.

Equipment Buyer Beware

Mistakes Made When Buying New Equipment Can Be Costly, So Do Your Homework

by William Van Winkle

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A NOVICE BUYER MIGHT EXPECT that nothing could be easier than sourcing new IT equipment. It's like buying a new car—just purchase it, turn it on, and everything works fine. Of course, the reality of data centers is that few things are ever easy, and new equipment purchases are just as prone to snafus as anything else. Here is some expert advice to help you avoid some of the most common new equipment pitfalls.

Key Points

- Be sure to properly research new equipment decisions to avoid making costly mistakes.
- Base hardware purchases on ROI and TCO, not on biased recommendations or whatever is the hot solution du jour.
- Power and cooling are key areas that enterprises often erroneously estimate; also, look at areas such as security and backup that may need to be updated to keep pace with the primary purchase.

Insisting On "Best Of Breed"

IT initiatives are like subway trains: Just wait a bit, and another one will be along soon. Inevitably, some new application or business need will pop up in the data center, and the team tasked with addressing the issue will often want to pursue a "best-of-breed" solution. The underlying assumption is that whatever is best of breed for this new need doesn't dovetail with tools already present in-house, so dollars get allocated and a rush for fresh spending ensues.

"Afterwards, I hear from IT leaders who wish that they had not jumped to the best-of-breed solution," says Darin Stahl, research lead at Info-Tech Research Group. "Investing in a thousand or so best-of-breed, point-specific data center tools does not lead to a best-of-breed data center. IT leaders we speak with report that it actually increases TCO, can significantly erode any previous investment assumptions made on the infrastructure management tools, and places in jeopardy the data center being able to manage and view the infrastructure end to end. The implementation of these spot tools does not integrate cleanly, nor does it come without significant and redundant investment of time and money."

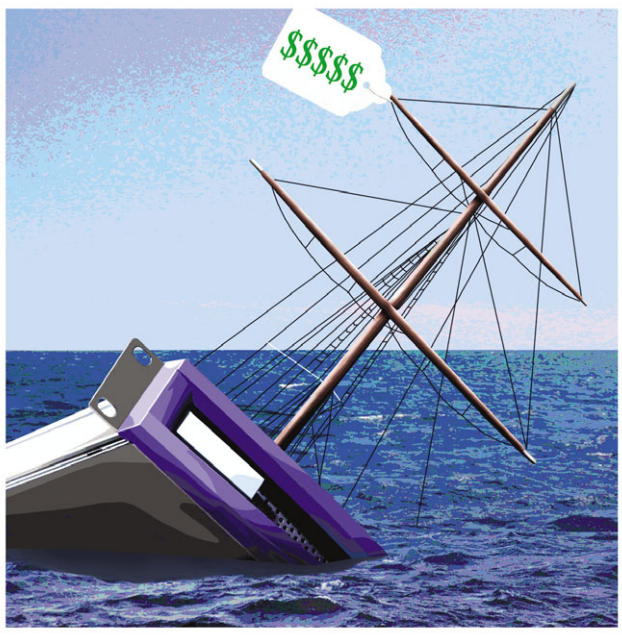
Obviously, systems and applications will eventually grow outdated and could benefit from a modern refresh, but just because something new comes along doesn't mean it's better in a holistic sense. Be objective in assessing currently deployed vs. prospective solutions. As Stahl puts it, "The incumbent toolsets should be the starting point for needs assessment."

Doing Insufficient Homework

Buying new equipment often means learning about new technology, and the unfamiliarity of new solutions can make some managers uneasy. When on *terra incognita*, it's not unusual for people to take shortcuts and opt for too-safe choices that may prove inadvisable in the long run. The less familiarity decision makers have with a new type of equipment, the more they should engage with their peers, both in-house and with outsiders in the same field. Some may fear that this makes them look weak, stupid, or otherwise deficient, but there's nothing deficient about gathering information to make informed decisions.

"Whether you go online to user groups or read product reviews, it's generally good practice to leverage the wisdom of crowds when it comes to choosing new data center equipment," says Steve Gillaspy, group manager of HP's BladeSystem product team. "In addition, I'd advise customers to seek out recommendations from analysts such as IDC, Gartner, and Forrester. They provide a third-party expert perspective to IT data center equipment purchases."

In the same vein, be sure to mine vendor resources. Naturally, vendors will be biased to some degree, but they still possess a wealth of information and on-staff technology experts able to provide essential information and effective metrics for making comparative decisions. In the process, it's likely that one or two vendors will demonstrate their ability to support the given technology as well as their track records in developing it. SMEs can also turn to publications such as *Processor*, which provides detailed information on new products available.



Cross-vendor homework can not only balance out vendor bias, it can also let managers dodge a related problem: unnecessary overprovisioning. Russ Conwath, senior research analyst at Info-Tech Research Group, cautions, "Too many times, I have seen tremendously expensive servers purchased because the configuration was what the software manufacturer recommended without regard for the enterprise's real performance and throughput requirements."

Failing To Properly Plan Power & Cooling

It's possible to have too much of a good thing. Take blades, for example: One of the best aspects of blade architecture is that it can be much more power-efficient than a traditional stack of 2U or even 1U servers. Less power is needed for an equivalent amount of work output. But a surprising number of adopters seem to view this advantage like low-fat food: With half the calories, one should be able to eat twice as much. In a data center, where infrastructure resources are inherently constrained, this approach is a recipe for disaster.

"There have been many occasions where we have customers purchasing blades to go into a shared colocation and suddenly find that the large power distribution units we have put into the rack to allow multiple blade enclosures won't be supported by the co-lo," says Leigh Carpenter, solutions architect manager for Nth Generation Computing (www.nth.com). "They are then forced to either spread enclosures across multiple racks or buy multiple power feeds. The cost of power in co-lo, especially per feed, can be crippling."

Carpenter cautions that she's seen many clients buy three-phase enclosures believing they'll only have one or two blade enclosures. (In fact, she cites this as the single most common mistake clients make.) However, with three-phase, two electrical feeds are needed per enclosure. Again, more research would have revealed that, with single-phase blade enclosures, two large feeds would have been able to supply up to four enclosures. "Besides finding out what power you have available," she says, "think about how many blade enclosures you could end up with."

Increasing Systems Without Increasing Management

Especially in the current economy, some enterprises continue to grow IT equipment resources without improving the means to manage that growth effectively. This could mean assets such as remote management software or improving security or even scaling storage and archiving to accommodate the new technologies. However, management can also mean physical management and monitoring.

"Recently," says Info-Tech's Conwath, "I've talked to a number of folks with equipment in their own, or a Tier 1, data center where there was no mechanism to detect and notify someone in the event of an HVAC failure. Surprising, but true. Equipment damage can be substantial and difficult to diagnose and cure. Be certain to install environmental monitoring that notifies IT staff or the security monitoring company of an issue."

Failing To Communicate

Enterprises spend thousands to millions of dollars on networking hardware, yet basic interpersonal communications often fall by the wayside. Few IT purchases happen in a vacuum, and it falls to management to realize how many groups will be impacted by new acquisitions.

"One of the biggest mistakes we see all the time is not including everyone in decisions when purchasing new infrastructure," says Nth Generation's Carpenter. "Nothing impedes a smooth implementation more than roadblocks from within a company—for example, not involving the networking team up front when deciding on network infrastructure or not involving the SAN guys when you will be needing storage assigned or buying new interfaces." P

Top Problem: Making The Process Too Complicated

The old adage "Keep it simple, stupid!" is ingrained in us from childhood, but with the distractions of complex technologies and seemingly insoluble, interconnected challenges, we just assume that solutions must be equally complex and convoluted. In fact, the opposite might be true.

"Keep it simple," says Russ Conwath, senior research analyst at Info-Tech Research Group. "A simpler system and network management solution that can be easily deployed and used is considerably more valuable than an unused, more complex tool."

Virtualization is a good example of this principle, reducing hardware complexity while still accommodating more functionality or realizing greater resource savings.

PRODUCT RELEASES

Do you have a new product that data center/IT managers would be interested in learning about

?

Send your press release or related product information to press@processor.com.

CLIENTS

■ Cabinet NG Shared Access Filing Environment Version 6.2

Cabinet NG launched the CNG-SAFE (CNG Shared Access Filing Environment) Version 6.2, which is designed to help organizations emphasize, share, and locate information for increased efficiency. By centralizing and structuring internal ad-hoc communications with programs such as CNG-SAFE v6.2, organizations can tighten security and achieve better ROI. CNG-SAFE v6.2 features folder note alerts to send users instant notification if there are special terms associated with the folder they are looking at, such as specific patient conditions, client payment status, or priority projects. CNG-SAFE v6.2 also adds a Quick Search feature and better user preference settings.

■ IBM ILOG Suites

IBM released multiple software suites for optimizing and managing data across complex architectures. The IBM ILOG offerings organize data using visualization technology such as diagrams, maps, charts, and other resources. IBM ILOG CPLEX 12 supports MATLAB, Microsoft Excel, and Python. IBM ILOG OPL-CPLEX Developer Edition and Analyst Studio utilizes the IBM ILOG OPL Development Studio, IBM ILOG CPLEX, and IBM ILOG CP Optimizer. The software series also features the IBM ILOG Optimization Decision Manager, IBM ILOG Gantt for .NET, IBM ILOG Gantt for .NET for Project Management 4.0, and IBM ILOG Diagram for .NET 2.0.

■ Kyocera Mita America KYOcapture 5.0

Kyocera Mita America announced version 5.0 of KYOcapture, its server-based document capture workflow solution. Powered by AutoStore and working with Kyocera's color and black-and-white MFPs, KYOcapture 5.0 allows organizations to capture, process, and route their paper and electronic-based documents to virtually any document management system. It serves as a gateway for documents to be stored, shared, searched, or retrieved throughout the network in order for end users to be able to access the information they want when they need it. Version 5.0 includes a customizable user interface; an improved bidirectional search functionality; SSL encryption and user authentication; and connectivity with complementing solutions, including CutCom's SentryFile document management solution.

■ OKI MB200 Multifunction Printers

OKI announced the MB200 series, a line of multifunction printers designed for small workgroups. Included in the series are the MB260, MB280, and MB290. The printers are designed to offer 30% faster print speeds, mono copying and printing, color and mono scanning, and scan-to capabilities; the MB280 and MB290 also include analog faxing. Each model also has wireless Internet capabilities, PaperPort document management utilities, and a full QWERTY keyboard.

NETWORKING & VPN

■ AlertSite Web Performance Metrics

AlertSite joined its Web performance metrics with Google Analytics traffic analysis to produce a better view into the effectiveness of organizations' Web sites. It offers an interface that superimposes analytical and performance information, allowing for a better look into how traffic impacts performance and how performance affects online consumer behaviors. AlertSite also offers DéjàClick, which records, measures, and monitors Web performance metrics, such as URLs, text, images, HTML, JavaScript, CSS, Flash, and others.

■ Alloy Software Navigator Express & Enterprise Editions

Alloy Software announced the release of separate Express and Enterprise versions of its Navigator product. Navigator Express will be aimed at small and medium-sized companies, while Navigator Enterprise will be targeted at larger enterprises. Alloy Software describes the Enterprise edition as an ITIL principles-based integrated IT infrastructure management solution that blends IT service support, asset management, and change management in one platform. The Express suite is a budget-friendly help desk and asset management product that provides intuitive means to improve efficiency and streamline help desk operations. A three-agent license of Navigator Enterprise with support for 100 computers is $3,845. Express with a three-agent license supporting 100 systems is $990.

■ Apparent Networks AppCritical Version 4 & Report Server

Apparent Networks announced AppCritical Version 4, a tool designed for enterprise-level network performance management, and AppCritical Report Server, an add-on module for AppCritical designed for advanced reporting. Among the upgrades to AppCritical are enhanced built-in analysis and reporting capabilities, including accelerated on-demand report generation, broader and easier dashboard access, additional customization options with dashboard reports, and easier ways to brand performance reports.

■ Asante Networking Switches

Asante announced the release of seven switches for enterprise networking. Two of the switches, the IC39480 and IC39240, are the flagship products in the IntraCore family.

The GX6-2400W was added to the top of the FriendlyNet product line and offers 45% power savings vs. traditional solutions; full layer 2+ management via Telnet, Console, and Web GUI; and a single-switch chip architecture. Two more switches, the IC3648 and IC3624, deliver VLAN, port trunking, and aggregation. The FS4124R and FS4116R are 10/100 plug-and-play workgroup switches for desktop or rack installation.

■ Avocent LANDesk Service Desk IT Business Management Suite

Avocent announced an upgrade to its LANDesk Service Desk IT Business Management Suite, which integrates service desk and IT service and infrastructure and asset management solutions for the data center on the desktop. LANDesk's features include a browser application that lets users access the LANDesk Service Desk from remote or mobile locations, multiple dashboards that can be centrally published and administered, and enhanced query results to let users design and interact with queries.

■ BVS YellowFin Fixed WiMAX Testing Module

BVS announced the release of its fixed WiMAX testing module for the YellowFin WiMAX 802.16e mobile analyzer platform. The testing module supports multiple user-selectable channel bandwidths of 1.75, 3.0, 3.5, 5.0, 5.5, 7.0, and 10MHz.

■ Digi AnywhereUSB TS, AnywhereUSB/2

Digi unveiled its two latest AnywhereUSB products designed to provide USB hubs connected directly to a LAN or WLAN without the presence of a local host PC. The AnywhereUSB TS provides USB

through Digi's Realport USB-over-IP technology and also supplies RS-232 serial ports using the company's Realport Serial-over-IP feature. Additionally, the small-footprint AnywhereUSB/2 is a space-saving network USB hub with two USB ports and one Ethernet port.

■ F5 Networks BIG-IP 3900 Hardware Platform

F5 Networks released the BIG-IP 3900 hardware platform, which unifies application delivery services for medium-sized enterprises. Primary features include traffic management capabilities, firewall security, application acceleration, and deployment flexibility. BIG-IP 3900 supports BIG-IP Local Traffic Manager, Global Traffic Manager, Application Security Manager, WebAccelerator, and Link Controller modules. Using clustered multiprocessing technology, the BIG-IP 3900's processing infrastructure provides optimized resources for powerful applications. Other features include fast cache, IPv6 gateway, rate shaping, SSL offload, and compression functionality.

■ Metalogix Universal SharePoint Manager v2007

Metalogix unveiled the Universal SharePoint Manager v2007 for minimized SharePoint Administration support tasks. The Metalogix USPM lets administrators focus on environment management, site management, user management, user security management, and list management. This release also lets administrators observe system viewpoints, remove inactive accounts, keep track of real-time trends, and decipher security parameters.

■ National Instruments NI WSN Platform

National Instruments announced the NI WSN (wireless sensor network) platform, a remote monitoring solution consisting of NI LabVIEW graphical programming software and reliable, low-power wireless measurement nodes. A key differentiator of the platform is LabVIEW software, which integrates seamlessly with the battery-powered, industrial-rated NI WSN measurement nodes that can be deployed in rugged conditions for long periods. With the flexibility of LabVIEW, the NI WSN platform simplifies and accelerates the development of these applications by delivering a drag-and-drop programming environment for configuring wireless systems, extracting measurements, performing analysis, and presenting data. LabVIEW also offers native Web connectivity for remote interaction with wireless systems.

■ NCP Secure Enterprise Server 8.0

NCP introduced the latest version of its software-based NCP Secure Enterprise Server for Windows 32- and 64-bit operating systems. This hybrid IPsec and SSL gateway lets users control and monitor VPN connections and maintain encrypted, firewalled, and authenticated connections from any device to the network. The NCP Secure Enterprise Server 8.0 features a redesigned Web interface, one plug-in for full remote network access, and master control through a single console.

■ NetApp 10Gb Ethernet Infrastructure

NetApp released a convergence-ready 10GbE network that's supported by FCoE (Fibre Channel over Ethernet) and designed to help enterprises migrate to Ethernet operation. To maximize ROI and enhance customer support, NetApp is using next-generation adapters for its storage infrastructure. The infrastructure includes the QLogic 8100 Series converged network adapters for users that run both FCoE and IP traffic on a single wire; this reduces the cost of operating with SAN and LAN adapters.

■ PJ Technologies Goverlan Remote Administration Suite v7

PJ Technologies introduced version 7 of its Goverlan Remote Administration Suite, which is designed to meet the newest IT requirements set by corporate networks. The software, available for Active Directory and Windows platforms, offers full support for Citrix XenServer and Microsoft Terminal Services Server clients, both fat and thin. Additionally, Goverlan version 7 provides enhanced desktop management through batch and scripts, and remote assistance anytime and anywhere. Users can utilize the WMIX v2 to design and produce WMI scripts, and the Goverlan Command Line utility will help customers gain access to the comprehensive set of Goverlan elements.

■ Riverbed Technology Central Management Console-Virtual Edition

Riverbed Technology released a virtualized version of the Central Management Console, the CMC-VE (Central Management Console-Virtual Edition). Created for managed service providers, the CMC-VE is designed to allow users to manage multiple sets of Steelhead appliance deployments, with each dedicated to a discrete customer, so that MSPs can scale central management capabilities as they grow. Features include scalability for the multitenant platform and flexible licensing.

■ Shunra Software Virtual Enterprise Suite Version 6.0

Shunra Software announced version 6.0 of VE (Virtual Enterprise) Suite, its WAN emulation tool. Designed to operate within a variety of network appliances coupled with software modules for specific application performance testing needs, VE Suite is designed to be easy to use, cost-effective, and accurate. Enhancements in version 6.0 include a significant increase in emulation accuracy, improved HP LoadRunner 9.5 integration with VE Predictor/Profiler, and an improved VE Multi-User feature.

■ SolarWinds Orion APM, WMI Monitor

SolarWinds updated the Orion APM (Application Performance Monitor) and introduced the WMI Monitor, a free tool, to help give users flexibility in managing critical applications and enable them to identify problems before they affect end users. Orion APM version 3 incorporates automatic

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discovery and a broad assortment of out-of-the-box templates as well as integration with community-generated resources on thwack. The combination of application support from Orion APM and the templates gives users the ability to find and monitor virtually any application in the data center. The SolarWinds WMI Monitor provides a desktop dashboard that monitors any single Windows server or application. The program allows users to easily track relevant WMI counters and get fast insight into any application through prebuilt application templates.

■ Stonesoft StoneGate SSL-1030

Stonesoft introduced the StoneGate SSL-1030, an appliance that's designed to cover the remote access needs of small and medium-sized organizations with up to 100 concurrent mobile users. It offers clientless access with strong authentication for business

applications. Rather than using third-party authentication tokens, mobile workers can use their mobile phones as authentication, which removes barriers that can keep them from accessing corporate resources. The StoneGate SSL-1030 includes version 1.3 of the StoneGate SSL 1.3 software, which features support for remote upgrades, versatile authentication, traffic recording, support for Windows Security Center, and support for Microsoft Outlook ActiveSync.

■ Symantec Workflow 7.0 & ServiceDesk 7.0

Symantec unveiled the latest versions of its Symantec Workflow and Symantec ServiceDesk offerings designed to improve businesses processes and enable users to do more in less time. Symantec Workflow 7.0 lets users enforce policies, automate repetitive tasks, and accelerate the delivery of IT and business processes. Symantec ServiceDesk 7.0 is a process-driven ITIL-based incident, problem, change, release, and knowledge management tool that improves availability and service levels. Features of both Workflow 7.0 and ServiceDesk 7.0 include a drag-and-drop UI; easy integration with existing equipment; and a Symantec Management Platform-based foundation, which makes it easier to integrate with other Symantec products.

■ Voltaire 40Gbps InfiniBand Switch Module For IBM BladeCenter

Voltaire announced the 40Gbps InfiniBand switch module for IBM BladeCenter, a switch designed to deliver faster InfiniBand connectivity to accelerate performance of applications running on BladeCenter in both the high-performance computing and enterprise data center markets. The switch features 14 40Gbps internal ports, 16 external QSFP ports, and port latency of less than 100 nanoseconds. Further, the ports are designed to consume only 4W of power each for maximum energy efficiency.

■ VSS Monitoring vStack & VSS 8 Port Distributed Tap

VSS Monitoring announced vStack, a stacking technology for distributed traffic capture devices. vStack is designed to deliver high scalability, speed, and fault tolerance to centralized network monitoring. vStack's redundant mesh topology allows for interconnecting traffic capture devices to scale to the largest networks and keep low latency to ensure routing redundancy. Additionally, VSS Monitoring will begin shipping the VSS 8 Port Distributed Tap, which is the first network tap with an intelligent stacking technology.

PHYSICAL INFRASTRUCTURE

■ Aten Dual-View KVMP Switches

Aten released 2- and 4-port versions of its USB 2.0 DVI Dual-View KVMP switches, which are part of the company's CubiQ series. Released as models CS1642 and CS1644, the KVMP combines 2- and 4-port KVM switches with a 2-port USB 2.0 hub while also providing dual-screen support for hi-res Dual Link displays. DVI- and

HDCP-compliant, both models support up to a 2,560 x 1,600 resolution and include Video DynaSync functionality for automatic video resolution optimization. Other features include 2.1-channel audio support; two or four dual-screen enabled computer support; a control panel with support for independently switching among KVM, USB, and audio focuses via Mode and Port Selection buttons; and a bypass feature that handles compatibility with all multifunction mouse drivers.

■ Black Box CAT 5e & CAT 6 Angled Panels

Black Box released CAT 5e and CAT 6 Angled Panel models, the JPM5E24-ANG, JPM5E48-ANG, JPM624-ANG, and JPM-648-ANG. The company says the panels are designed to simplify cable patching tasks, including doing away with the need for horizontal cable managers, saving technicians'

time. Specifically, Black Box states the panels' design lets technicians route cables directly into the ports from vertical cable channels, making patching a quicker task and at no extra expense than when installing horizontal cable managers. The panels, which are constructed of rolled-edge, 16-gauge steel, are 100% factory-tested and exceed appropriate CAT 5e and CAT 6 standards, the company states. Additionally, the CAT 5e panels are suitable for GbE transmissions, while the CAT 6 panels are suitable for 10GbE transmissions. Beyond supporting universal T568A/T568B wiring, the panels include 10-32 and 12-24 mounting screws.

■ CPI N-Series TeraFrame Network Cabinet

CPI introduced the N-Series TeraFrame network cabinet, which is engineered to fit the Juniper Networks EX8200 line of modular Ethernet switches and accommodate switches that use side-to-side airflow. The network switch exhaust duct encapsulates hot exhaust air from the side of the switch and reroutes it away from the cabinet. Then, in hot aisle/cold aisle layouts, it changes the side-to-side airflow into a front-to-rear airflow pattern. Three additional inches of space where the side of the switch and duct meet let the EX8200 modular switches fit within the N-Series while separating and eliminating the hot exhaust and abolishing recirculation of exhaust for safe equipment operating temperatures.

■ Eaton Forseer 5.0

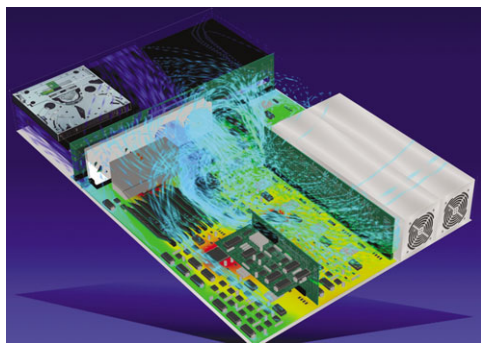
Eaton released Forseer 5.0, which lets users monitor power, environmental, safety, and security systems. Version 5.0 supports Eaton's Power Xpert Reporting software and features an enhanced WebView tool with automatic scaling and filtering capabilities. It also features a Web browser portal widget that uses HTML iFrame technology. Additional benefits include an extensive multivendor device-driven library, customizable GUI, and Web browser access.

■ Emerson Network Power Liebert PSP

The Liebert PSP is a UPS targeted toward point-of-sale terminals, workstations, networks, and other important applications. The lineup includes four models of the next-generation Liebert PSP in capacities of 350VA/120V, 500VA/120V, 500VA/230V, and 650VA/230V. The Liebert PSPs are designed to provide up to five minutes of backup power at their full capacities. Each also provides one outlet that is surge-protected for critical equipment. The two-year replacement warranty includes battery health and covers shipping.

■ Future Facilities 6Sigma ET

Future Facilities announced details for its 6Sigma ET, which it bills as the next generation of electronic cooling software and the first major electronics thermal analysis product developed in the last 10 years. The company states leading software designers within the industry created the software by starting from scratch "without the restrictions involved in working with software that was developed originally a decade ago." In



addition to speeding up model creation, the approach makes automatic gridding possible and post-processing easier, and it offers support for redefining electronic products' form factors by moving past traditional box, rack, and room boundaries. PCB level design, for example, can be completed in the framework of the data center as the final application, the company states. 6Sigma ET is part of the 6Sigma DC software suite and is a sister product to 6SigmaRoom. Combined, the apps make it possible to design next-generation equipment configurations such as modular data centers with fanless servers.

■ Para Systems Minuteman EnSpire EN750 & EN900

Para Systems announced the latest offerings in its Minuteman EnSpire series of uninterruptible power supplies, the EN750 and EN900. The UPSes are best suited to small office/home office environments and small to medium-sized enterprises looking for affordable power protection for mission-critical hardware. The EN750 and EN900 feature an energy-saving rest mode; 90% efficiency operation; and an LCD screen that details input voltage, battery runtime, connected load consumption, and other data. All EnSpire UPSes come with a three-year warranty on parts and labor plus a two-year battery warranty.

■ PDI Updated Product Line

PDI introduced a host of improved products. Products include the PowerCube Transformer and Power-Hub PDUs; computer cable offerings; redundant power distribution systems; the BCMS (Branch Circuit Monitoring System) Family; J-Comm Retrofits; Global Maintenance Bypass Cabinets; custom distribution solutions; and service contacts, spare parts, and upgrades. Products that have been enhanced include the PowerPak 1000, PowerPak PDU, Remote Power Panel, Qwikswitch Single Phase Static Transfer Switch, and the WaveStar Static Transfer Switch. Each new and improved product is designed to better incorporate the data center floor and bring local or central monitoring control or power to mission-critical systems.

■ Raritan dcTrack

Raritan announced a major upgrade for its dcTrack data center infrastructure management tool. Designed to help data centers visualize and automate the tracking and management of IT and facility systems, dcTrack maintains real-time views and granular details of servers, networking, and facilities elements in the data center as well as information on power consumption, heat dissipation, raised floor space, and rack elevations. The upgrade includes wizards to import existing spreadsheets about IT assets and connectivity details as well as wizards to import structured cabling, power distribution panel boards, and cable connectivity and cross connect schedules.

■ Server Technology Comprehensive Service Portfolio

Server Technology announced a comprehensive service portfolio, a variety of service products designed to help data center managers with installation and configuration services. The six service offerings include Cabinet Power Distribution Unit Installation, Cabinet Power Distribution Unit Configuration, Sentry Power Manager Configuration Basic, Sentry Power Manager Configuration Complete, Sentry Power Manager Customization, and Upgrade Services.

■ Siemon XLR8 Mechanical Splice Connector & Termination System

Siemon released its latest XLR8 mechanical splice connector and termination system designed to be used in fiber optic cabling installations. The XLR8 system lets users complete termination connectors more quickly, cutting down on install and deployment times. The offering reduces connector time by combining splicing and crimping into a single action, which also decreases the amount of time the installer handles the sensitive cabling. The XLR8 tool is capable of terminating either SC or LC interfaces, in handheld or table-top orientation, and is available with accessories required for high-performance terminations.

■ SIIG SuperSpeed USB 3.0 Cables

SIIG announced four cables that support the USB 3.0 specification. The SuperSpeed USB 3.0 cables are backward-compatible with USB 2.0 devices, which can't exceed

their original speed under the older interface. Featuring 4.8Gbps bandwidth, the SuperSpeed USB 3.0 cables also provide more bus power (900mA) for improved recharging performance and broader support for bus-powered devices. The four cables range from 1m ($14.99) to 2m ($19.99) in length and come in both A-to-B and A-to-A configurations.

SECURITY

■ Credant Mobile Guardian Enterprise Edition v6.5

Credant announced edition 6.5 of its Mobile Guardian Enterprise Edition, a data protection solution for Mac OS X users, including users of Mac OS X v10.4 Tiger and v10.5 Leopard. Mobile Guardian Enterprise Edition 6.5 also enables iPhone users to securely synchronize with their

PRODUCT RELEASES

exchange servers. Other features include data-protection support for Intel-powered Mac laptops, desktops, handhelds, and external media; encryption of all data on physical and logical Mac drives; integration

with other platforms and with native Mac OS X authentication interfaces; and full compatibility with virtualization systems such as Parallels and VMware.

■ Entrust & Clickatell One-Time Passcodes

Entrust has entered into a joint marketing agreement with Clickatell to offer OTPs (one-time passcodes), or soft tokens, for mobile devices via SMS to add another authenticator to Entrust's IdentityGuard authentication platform. Clickatell CEO Pieter de Villiers stated the OTPs can help reduce security access costs while simultaneously offering convenience by providing an easy method to gain secure access to financial accounts, corporate environments, and government networks. The agreement provides technology to let single or multiple OTPs be sent to devices, with IdentityGuard automatically providing a configurable number of OTPs through Clickatell text messaging. The passcodes then act as a second authentication factor with IdentityGuard. Further, the offering will automatically refresh passcodes and enable authentication when out of cell phone range.

■ GFI WebMonitor

GFI announced its freeware version of GFI WebMonitor, which is part of its We Care initiative. GFI WebMonitor is designed to control and monitor employee access to the Internet so organizations can be sure their workers are spending productive work-related time on the Web. Organizations can both block access to sites on an individual or group level and view Web-browsing activity with the commercial version of GFI WebMonitor. Additionally, this release of GFI WebMonitor includes hidden downloads checking, which identifies and blocks background processes from downloading potentially malicious payloads or those that use up network resources.

■ Global DataGuard Firewall/Syslog Module

Global DataGuard announced its Firewall/Syslog module, which is intended to help companies identify and prevent security breaches. The Firewall/Syslog module integrates with all of Global DataGuard's Enterprise UTM applications. The module collects, normalizes, aggregates, compresses, and encrypts log data from third-party routers, switches, and firewalls. It utilizes sophisticated search and parsing capabilities, and it has 1.5TB of onboard storage to hold collected log information.

■ Red Earth Policy Patrol 6

Red Earth unveiled Policy Patrol 6, its first server-based email disclaimer product for Exchange Server. Featuring improved spam control and attachment filtering, Policy Patrol 6 shows a disclaimer and signature in the Outlook Sent Items folder. Antispam features allow users to block emails, graylist without requiring an SQL Server Express database, and virtually content-check attachments for suspicious phrases. Other features include the Web Manager, antispam reports, Bayesian filtering, real-time blacklists, header checking, keyword filtering, and sender policy framework.

■ Symantec Web Gateway 4.5

Symantec introduced the latest addition to its Symantec Protection Suite Enterprise Edition, Web Gateway 4.5. The Web security appliance delivers comprehensive protection against botnets and Web 2.0 threats through multiple layers of anti-malware technologies and Symantec's antivirus engine. Web Gateway 4.5 consists of a real-time inspection engine that scans inbound and outbound traffic and checks threats against the Symantec Global Intelligence Network of 11 Security Response Centers and 240,000 attack sensors, which log more than 2 billion events each day.

SERVERS

■ SGI CloudRack X2

SGI announced CloudRack X2, a new generation of scalable workgroup clusters for HPC, graphics, and Internet applications. CloudRack X2 delivers 99% power distribution efficiency with Power XE in a 5-square-foot form factor. It can be used as a standalone unit mounted on casters for in-lab use or installed in industry-standard 19-inch racks. CloudRack X2 is the first version that includes CloudRack trays available in HPC-dedicated configurations. It supports high-performance processors and high-speed interconnects, including 40Gbps InfiniBand. CloudRack X2 is also ideal for large scale-out deployments into existing rack environments. Customers with traditional rackmount architectures can leverage the benefits of the CloudRack product line within smaller physical footprints to maximize data center real estate.

STORAGE

■ Aberdeen 100TB AberNAS, Stirling X888

Aberdeen announced two servers that feature the 2TB SATA hard drives from Western Digital that it recently qualifed, the

100TB AberNAS server with VMware certification and the Stirling X888 server. The former boasts a 100TB capacity, and the latter can scale to more than 500TB. With high areal density and other improvements, the Western Digital 2TB drives were able to outread and out-write certain 15,000rpm SAS drives in RAID 5 tests.

■ Apricorn PCI-E & PCI-X Drive Arrays

Apricorn released PCI-E and PCI-X drive arrays, with each card type supporting up to four 2.5-inch SATA hard drives or solid-state drives. The company says industrial and power users can tap into as much as 4TB in a single slot, supporting such applications as servers, industrial computers, high-speed data collection, animation, CAD/EDA simulation, video editing, scientific computing, and storage systems. Each card has an open-configuration design that embeds 2.5-inch, 5,400/7,200rpm or faster solid-state SATA drives on one card. In use with SSDs, the array can deliver sequential read speeds of 791MBps and sequential write speeds of 675MBps. The array uses one internal full-length PCI-E x4 slot and is compatible with Apple Mac Pro systems, server motherboards, and 1U slots. Drivers for Mac OS X, Linux, and Novell Netware for RAID and non-RAID uses are included.

■ BlueArc Mercury Series

BlueArc released its Mercury series network storage platform. Mercury combines BlueArc's SiliconFS file system with Titan storage solutions. Mercury features HybridCore Architecture, which uses field-programmable gate arrays and multicore processors to optimize and separate data movement and management processes.

■ DataCore Software Virtual SAN Appliance

DataCore has partnered with Citrix Systems to offer a free 30-day trial of DataCore Virtual SAN Appliance. DataCore has also released a Citrix StorageLink adapter that integrates DataCore's storage virtualization products with Citrix Essentials for XenServer and Microsoft Hyper-V. DataCore states that the Virtual SAN Appliance evaluation application gives users an easy method to try Citrix Essentials with a StorageLink-certified, iSCSI shared storage SAN that can combine up to 1TB of drive space, provide thin provisioning abilities to virtual machines, enhance application performance, and create snapshots for instant volume cloning and fast disk-to-disk backups.

■ DSI DSI3020 PCI-E Flash Storage Expansion Card

DSI announced its DSI3020 PCI-E Flash Storage Expansion Card. The DSI3020 is a solid-state solution that is designed to increase performance by providing a larger and faster data buffer zone. The DSI3020 offers a 450GB capacity and responds two to five times faster than external flash drives and controllers, DSI says. The card is designed for enterprises that don't currently need an external SAN/NAS.

■ Imation LTO-5 Tape Media

Imation announced it has developed a multiterabyte native-capacity tape using advanced MP (metal particulate) media and Imation's TeraAngstrom technology. Imation says it's the first company to license the next generation of Ultrium LTO-5 tape media. The LTO-5 tape cartridges feature 3.2TB compressed storage and up to 360MBps data transfer rates. Further enhancements and better data compression mean that the same length of tape can store more data, letting data center managers keep existing footprints without adding space to handle primary storage growth. Imation says LT0-5 tape cartridges should be available early next year.

■ Imation Secure Scan

Imation released its Imation Secure Scan, which is a tape scanning platform capable of locking LTO media so that it cannot be written to or read from using another LTO drive. Imation Secure Scan lets users proactively assess library health and diagnose the source of drive and media errors. The platform also features a barcode reader for scanning cartridges and a phone-home capability that lets users contact technical service for additional troubleshooting assistance. Imation's Secure Scan starts at $3,999.99.

■ Kroll Ontrack Data Recovery Portal For Apple Customers

Kroll Ontrack launched a global Data Recovery Portal for Apple customers via its Ontrack Data Recovery services. Kroll Ontrack offers data recovery solutions for Apple customers with Mac systems, servers, applications, files, operating systems, and iPod and iPhone devices. Kroll Ontrack can work directly with Apple's Service Providers to provide global data recovery service in localized languages to Apple customers. Apple Service Providers now have access to a customized Web portal to register data recovery jobs for their customers in real time as well as direct and immediate connectivity to data recovery specialists and engineers. Once the data recovery job is registered via the portal, customers receive automated updates directly from Kroll Ontrack.

■ Nexsan/FalconStor DeDupe SG Product Family

Nexsan and FalconStor partnered to develop the Nexsan DeDupe SG product family to increase operational efficiency and streamline high-performance data deduplication. Nexsan DeDupe SG utilizes multiple processes to meet customer needs through data reduction, footprint reduction (with condensed storage arrays), and AutoMAID technology. The FalconStor FDS (File-interface Deduplication System) functions as the deduplication software and increases interoperability for application and disk-to-disk archiving. The Nexsan DeDupe SG supports Oracle RMAN and Microsoft SQL and starts at $49,000.

■ Pivot3 Serverless Computing VideoBank

The Pivot3 Serverless Computing VideoBank appliance stores surveillance video in a multiple-camera environment. It comes

with an integrated virtual server, so it doesn't require a physical server. Therefore, it conserves space in its intended educational, enterprise, and retail environments. The Serverless Computing VideoBank can handle from 4 to 10TB of video footage. Pricing starts at $8,800.

■ STEC 4Gb Fibre Channel ZeusIOPS SSD

STEC announced that the third generation of its 4Gb Fibre Channel SSD is sampling, with mass production planned by year's end. The 3.5-inch drive, which supports SLC and MLC flash memory, brings lower latency and improved speed to the enterprise. It can manage up to 40,000I/Ops in random write performance and up to 80,000I/Ops in random reads. In transfer speeds, its write speed can reach a maximum of 300MBps, and its read performance can top out at 380MBps, according to the company.

■ STEC 6Gb SAS ZeusIOPS SSD

STEC launched the first 6Gb SAS SSD for the enterprise, a ZeusIOPS model that comes with support for SLC and MLC flash memory. The 2.5- or 3.5-inch drive is currently sampling, with mass production slated for before the end of the year. The 6Gb SAS ZeusIOPS can hit 40,000I/Ops in random writes and 80,000I/Ops in random reads, STEC says, with transfer speeds of 300MBps writes and 550MBps reads.

■ Winchester Systems FlashDisk SX-3400, FlashDisk SX-2300

Winchester Systems announced the FlashDisk SX-3400 and FlashDisk SX-2300 SATA disk arrays. The SX-3400 expands to 224TB using 3U shelves, and the SX-2300 expands to 168TB using 2U shelves. Both models feature RAID 6 dual parity to protect data during rebuilds. The company says the FlashDisk SX-3400 and SX-2300 are ideally suited for high-capacity applications, such as deep archives, security video, medical imaging, backup, snapshot, disaster recovery, virtual tape library, data acquisition, digital imaging, and audio. Additionally, the disk arrays feature high-performance specs, including 1,893MBps sustained throughput and more than 117,000I/Ops.

PRODUCT SPOTLIGHT

A Look At Some Of The Newest Tape Backup Products

Crossroads Systems ReadVerify Appliance

Crossroads Systems RVA (ReadVerify Appliance) is designed to provide a simple means of monitoring, tracking, and reporting on tape devices and media to help ensure the optimal performance and health of tape devices and tape media, in addition to ensuring tape backup system integrity. With adequate visibility, RVA helps data center administrators discover and mitigate any media or hardware issues before an organization-threatening failure occurs.

Best For: Proactively monitoring and validating the integrity of tape media and tracking the performance and utilization of tape devices.

- Monitors, tracks, and reports on performance and utilization in real time
- Helps prevent backup system failures
- Offers insight into incomplete or failed backups
- Helps discover and address system issues before failures occur
- Automatic alerting and reporting

ReadVerify Appliance RV50f, 1 to 4GB FC, RJ-45 MGMT Port, 1U, 90 slots included is $5,900 (MSRP)
(512) 349-0300
www.crossroads.com

Crossroads Systems TapeSentry

Designed to alleviate the security issues associated with tape storage, Crossroads Systems TapeSentry encrypts tape media to prevent unauthorized access, theft, and data loss. Adding TapeSentry to a data center won't impact server performance and is designed for quick and easy implementation with the ability to configure any port, host access, or device connectivity. TapeSentry features centralized key management via a Web-based interface with support for flexible, non-drive, or device-dependent encryption policies. Other features include multisite key replication, automatic backup and recovery, and secure sharing of data in the event of a disaster recovery effort.

Best For: Rapidly and cost-efficiently encrypting your data stored on tape with simple, secure, and robust key management.

- Data encryption to prevent loss or theft
- Support for secure key management
- Requires no infrastructure updates or add-ons
- Avoids performance slowdowns during integration with backup applications
- Flexible encryption policies
- Easy setup and configuration

TapeSentry f2, 2-port, 4Gbps tape encryption appliance is $17,500 (MSRP)
(512) 349-0300
www.crossroads.com

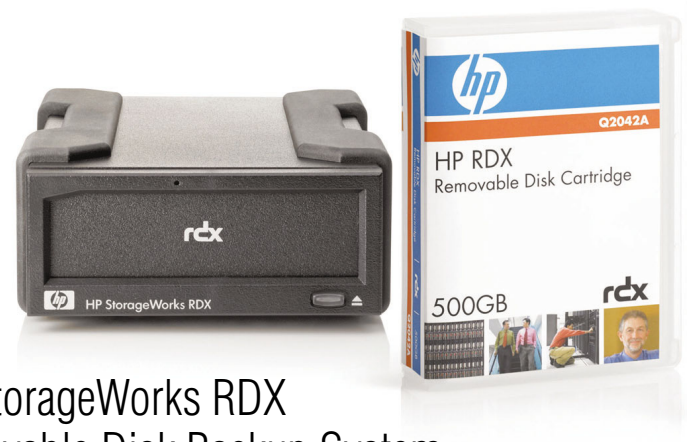
Gresham Enterprise Storage Clareti Storage Director

Clareti Storage Director, Gresham's backup virtualization product, is designed to deliver streamlined, optimized, and simplified data protection for IBM Power Systems, HP NonStop, and Open Systems. Storage Director works seamlessly with Gresham's Backup Virtualization tools and also integrates disk and tape to help users gain optimal data protection. By using Storage Director, data centers may save costs by reducing or repurposing existing hardware, delivering cost-efficient growth, increasing operational uptime, simplifying operations, decreasing backup failures, and cutting down on the number of required tape volumes.

Best For: Environments looking to improve backup and restore performance, lower operating expenses, and better utilize existing hardware.

- Easy integration with existing backup applications, drives, libraries, and media types
- Task automation
- Scalability for small sites up to large enterprises
- Simple for administrators to use
- Provides disk performance combined with the security and cost efficiency of tape

Starts at $10,000
(800) 450-0575
www.gresham-storage.com



HP StorageWorks RDX Removable Disk Backup System

The RDX Removable Disk Backup System offers fast disk-based performance with the ability to store 160GB or 320GB of data on a single removable disk cartridge at speeds of up to 108GB per hour. Portable, durable, and rugged removable disk cartridges let you simply and securely store backups offsite for complete data protection and peace of mind.

Best For: Small and medium-sized enterprises needing a simple, inexpensive, and reliable way to protect critical data and systems.

- Drag-and-drop file access designed to make backup as simple and convenient as a mouse click
- Backup of data at hard drive speeds of up to 108GB per hour
- Random disk access to restore critical files in seconds
- Easy scalability and expandability
- Plug-and-play implementation

Starts at $279
(800) 289-6947
www.hp.com

HP StorageWorks DAT160 USB Tape Drive

Protect your small or medium-sized enterprise, remote office, or workgroup with the HP StorageWorks DAT 160 USB Tape Drive offering the highest capacity and performance with the ability to store up to 160GB of compressed data on a single cartridge at speeds of up to 50GB per hour (assuming 2:1 data compression). The DAT 160 USB Tape Drive is available with a USB 2.0 interface for low-cost universal plug-and-play connectivity in a choice of models, including internal (which also fits in the 1U Rack-Mount kit) and external, making it compatible with virtually any server environment.

Best For: Small and medium-sized enterprises requiring cost-effective long-life data retention.

- Can store up to 160GB on a single cartridge, while backing up to 50GB per hour or one cartridge in about three hours
- Two-generation backward-compatibility with DAT 40 and DAT 72 tape drives
- Low-cost backup solution and ongoing low cost of ownership
- Universal plug-and-play native USB 2.0 interface
- Small half-height form factor and choice of models to fit servers, workstations, and rackmount kits

Starts at $729
(800) 289-6947
www.hp.com

PRODUCT SPOTLIGHT

Compiled by Seth Colaner

Overland Storage NEO 2000E & 4000E

Designed for easy installation and compatibility with future technologies, the Overland Storage NEO 2000E and 4000E offer embedded SCSI, Fibre Channel, or SAS connectivity. In addition to support for LTO half-height tape drive and direct-connect interfaces for lowering initial costs and ensuring data protection, the NEO 2000E integrates with Overland's REO Series of disk-based backup and recovery VTLs, Snap Server NAS appliances, and ULTAMUS RAID SAN. It also features a scalable, multimodular design from 30 to 240 cartridges per module. The 4000E features redundant power.

Best For: Midrange data storage requirements.

- Storage capacity of 12TB (2000E) or 24TB (4000E) up to 384TB
- Can handle 432GB per hour up to 13.8TB per hour
- Embedded SCSI, Fibre Channel, and SAS connectivity
- Support for LTO half-height tape drive and direct-connect interfaces
- Modular design for scalability
- Easy integration with existing storage devices and appliances

Starts at $8,999 for the 2000E and $39,999 for the 4000E
(888) 343-7627
www.overlandstorage.com

Spectra Logic T50e Tape Library

The Spectra Logic T50e Tape Library offers enterprise capabilities in a compact 4U rack-mount library with a range of support options to complement specific requirements. The T50e features LTO technology, library media management functionality, and increased security through the integrated BlueScale Encryption. It is compatible with all major backup packages and operating systems. Connectivity options on the T50e include direct-connect SCSI or Fibre Channel, with iSCSI support planned in the future.

Best For: SMBs and remote offices.

- Setup takes less than half an hour
- Management via Web browser for easy operation
- Built-in AES 256-bit BlueScale Encryption and Key Management
- Monitors its own drives, power supplies, controller, and robotics with the AutoSupport features
- Media Lifecycle Management and Certified Media tools to detect media errors before they happen

Starts at $9,995
(877) 205-7005
www.spectralogic.com

Spectra Logic T680 Tape Library

The Spectra Logic T680 Tape Library features the ability to store a petabyte of data in a single rack space and is expandable up to more than 10,000 slots of storage. Designed to eliminate backup failures caused by dirty or overused tape media, the T680 supports Spectra's BlueScale software to provide a single layer for a number of management tasks.

Best For: Medium-sized businesses to small enterprises.

- Supports up to 680 tape cartridges and TranScales to the T950 for more than 10,000 tape cartridges
- 1.08PB (compressed) maximum capacity
- Supports 12 full-height tape drives (with support for up to 24 drives planned)
- 10.4TB/hour (compressed) throughput with LTO-4 drives and media
- Connectivity via nTier disk cache, VTL, Fibre Channel, SCSI, or iSCSI

Starts at $67,780
(877) 205-7005
www.spectralogic.com

Sun Microsystems StorageTek SL3000 Modular Library System

The Sun StorageTek SL3000 Modular Library System lets you grow your tape automation environment at your own pace, from 200 to more than 3,000 cartridge slots. Its open design offers true mixed media, logical and physical partitioning capabilities, advanced management, and high-availability features, so you can consolidate mainframe and open systems environments while minimizing power, space, and operating costs.

Best For: Midrange storage needs.

- Scales from 200 to 3,000 cartridge slots
- RealTime Growth and Capacity on Demand simplify scalability
- Flexible solution for partitioning, sharing, and managing
- Employs technologies designed to simplify capacity planning
- Supports for both mainframe and open systems

Starts at $67,990
(800) 786-0404
www.sun.com

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Data Media Source provides complete data destruction services for all tape media formats. The company reclaims used media, repurposing it to keep it from landfills or incineration and providing the disposer some form of reclaim value per tape. Data Media Source provides a secure means of erasing data and reclaiming tapes and components for further use. Total data security, controlled chain of custody, a detailed certificate of data destruction, and all logistics costs are included. And, pricing for services typically nets out to free or a net reclaim value, so companies can properly dispose of obsolete tapes and turn a laborious chore with a big labor cost into a completed solution with a net payback.

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RecycleYourMedia buys excess new and used data tape media from companies when the media are out of archive or no longer in use. The company also recycles tapes that no longer have any resale value. The company's premise is to keep e-waste out of landfills, as tapes that have been written to only a few times can still be used. In fact, some tapes can be written to more than 1 million times. RecycleYourMedia helps the environment by keeping used media out of landfills and helping companies recoup initial IT expense and avoid costly shredding fees.

(877) 798-2737 • www.recycleyourmedia.com

News

Company Plans Wind-Powered Data Center

Baryonyx recently was the highest bidder in a Texas General Land Office lease sale for two offshore wind concessions in the Gulf of Mexico, and the energy company also was given a wind energy development located in the Texas Panhandle. Baryonyx says it's evaluating the environmental and engineering options, and, if suitable, it plans to apply for approval to construct wind turbines and a colocated Tier 4 data center powered by the wind energy.

In a statement, Ian Hatton, Baryonyx CEO, said that "Global adoption of Web-delivered services—particularly those of the larger search engines—has substantially added to energy demand and now accounts for over 1.5% of global energy demand with a substantive carbon footprint. The grant of these leases from the State of Texas are not only an important milestone for Baryonyx, but also for demonstrating a way forward to reduced reliance on imported energy and simultaneously increasing the environmental sustainability of technology that has become core to the modern economy."

Wind Turbines, Energy Store

The Baryonyx plan combines the wind turbines with an energy store so the data centers can draw power from the stored energy when there's not enough wind to generate sufficient power. And because the data center would be located at a common connection point to the wind power plant and wind turbines, Baryonyx says it can locate large wind farms in remote rural and offshore areas that offer a lower upfront infrastructure cost. According to the Baryonyx Web site, subject to consents, Baryonyx intends to develop wind/data facilities in Dallam County, near Stratford in the Texas panhandle, in the next 36 months. Within three to five years, it will develop two large-scale offshore projects in the Gulf.

The wind energy leases total about 8,000 acres onshore and 38,000 offshore of Texas. The project concept for the wind farm in Dallam County includes a data center of 25,000 square feet, an onshore wind power generation project of 150MW, and a subsequent second-phase wind power generation project of 150MW. The 100 wind turbines, based on 14,288KwPA consumption per household, could provide enough electricity to meet the annual needs of more than 80,000 Texan homes. Baryonyx projects that the offshore sites in Mustang and Rio Grande will both hold between 170 and 225 wind turbines.

by Nathan Lake

FEATURED PRODUCT

Reliable Environmental Monitoring

AVTECH's TemPageR Is Flexible Enough For Any Data Center Or Server Room

by John Brandon

• • •

PLANNING FOR DISASTER RECOVERY is a good idea, but the best approach is disaster prevention. In any data center—regardless of size or location—environmental sensors, offsite duplication systems, and even simple JavaScript routines that trigger air-conditioning units when temperatures are above normal can help prevent serious problems that cause business delays and infrastructure nightmares. One simple monitoring product is AVTECH's TemPageR, a small monitoring device with sensors that installs on a server rack, wall, or ceiling and regularly scans data center locations for temperature changes.

The product name has a unique story. AVTECH (888/220-6700; www.avtech.com) started 21 years ago providing alerting software for IT staff and other field personnel who would receive the notice on their pager. Now that pagers are not as ubiquitous, AVTECH has improved its flagship PageR Enterprise software to support a myriad of smartphone devices, text messages, and email alerts. TemPageR is the company's entry-level hardware solution that's designed for small to medium-sized IT environments that need to monitor a server room but may not need the more advanced Room Alert monitoring systems that AVTECH also offers.

"The name is kind of antique; we also alert to iPhones, BlackBerrys, and that kind of thing," says Michael Sigourney, senior product specialist at AVTECH. "The original product could automatically dial out via a phone line and send a message to a pager. Since 1988, we started making more environmental sensors for monitoring temperature, power, humidity, and other things. We wanted a product that only monitors temperature, and that's how we came up with the name TemPageR."

How TemPageR Works

About the size of a smartphone, TemPageR has one port for your network and a 5-volt power connector. The unit also runs on a backup 5-volt battery-powerd mini UPS for about 20 to 30 minutes in the event of a power failure. Every TemPageR device comes with a license for PageR Enterprise monitoring software with advanced alert features. There's also an extra 25-foot RJ-11 cable and remote thermostat sensor for monitoring another location or part of a cabinet.

TemPageR provides a great amount of flexibility in how you configure the alerts. There is no limit on the number of messages and emails you can configure, and you can set up a hierarchy so that, for example, a technician receives an email at one level, and everyone in the IT group receives a more urgent alert at another level. Network managers can also use JavaScript, VB script, or another command to automatically enable an air-conditioning unit or other device on the network.

TemPageR automatically logs temperature data, which managers can view for historical reference and make decisions about IT equipment configuration. A graphing option in the bundled Device ManageR software shows a visual representation of temperature fluctuations over time and for each sensor.

AVTECH provides a clear upgrade path for the TemPageR so that an SME can add Room Alert products that monitor more environmental conditions, such as power and humidity, but use the same software to track all sensors. The TemPageR package comes with a license for PageR Enterprise, but you don't necessarily have to use the monitoring software with the TemPageR product and could use it with other sensors. At that point, you would just use the Device ManageR software that also comes with TemPageR.

"What makes TemPageR attractive is that it is so cost effective," adds Sigourney. "It has the ability to log the data; graph the data; [and] send out alerts as monitoring packets instead of a simple thermostat, so when you have a problem, if you are anywhere in the world, you can see the real-time temperature and see a real-time graph showing the temperature every minute with historical data."

Upcoming Features

One of the main upgrades in the works for the TemPageR product is PoE (Power over Ethernet), which should be available as an option early next year. Sigourney says there is not a high demand for PoE today because the product is designed for smaller data centers in which power connections are readily available. TemPageR runs on firmware that can be upgraded, and there is a secondary application for managing the device, which is also updated frequently. One of the upgrades that AVTECH is considering is adding the capability of sending sensor data to a Twitter feed so that managers can track the status that way, without needing to always have email running or a phone available.

AVTECH is also considering an iPhone app for TemPageR, which would allow managers to see sensor data, historical temp readings, and graphs on the iPhone. These additions to the product line provide more flexibility in how an SME manager can get a view into the temperature readings inside the data center. This helps prevent equipment failures or a catastrophe when, as Sigourney put it, someone in a small company forgets to turn off a heating unit or the plumbing fails in the office complex. Sigourney explains that, in an SME, the data center or server room is often not built from scratch with environmental conditions in mind and is often built in a location where there may have been office staff at one time, or right next to a restroom or lunchroom.

"We don't believe in disaster recovery per se, but in disaster prevention—that is what all of our products are designed to do," says Sigourney. "You can keep the sensor management as simple as you want, because an SME does not always have the time to manage the sensors. We have people who get very creative and complex and those who just want an alert when a server goes past a set temp." P

TemPageR Specs

- Monitors temperature ranges from -40 to 185 degrees Fahrenheit (-40 to 85 degrees Celsius)
- Comes with mount kits for rack, ceiling, or wall
- Includes one built-in and one external sensor for temperature and two external ports
- Sends alerts via email, SMS, SNMP, Web update, and email-to-SMS
- Includes a license for PageR Enterprise and Device ManageR software
- Does not require a host PC to run the sensors
- Offers data logging, graphing, and real-time sensor status

AVTECH TemPageR

Description: TemPageR is a flexible, powerful monitoring system with built-in and remote sensors that monitor temperatures and send alerts to IT staff as text messages or emails.

Interesting Fact: AVTECH's products are used in a variety of industries, including telecommunications, pharmaceuticals, publishing, and education.

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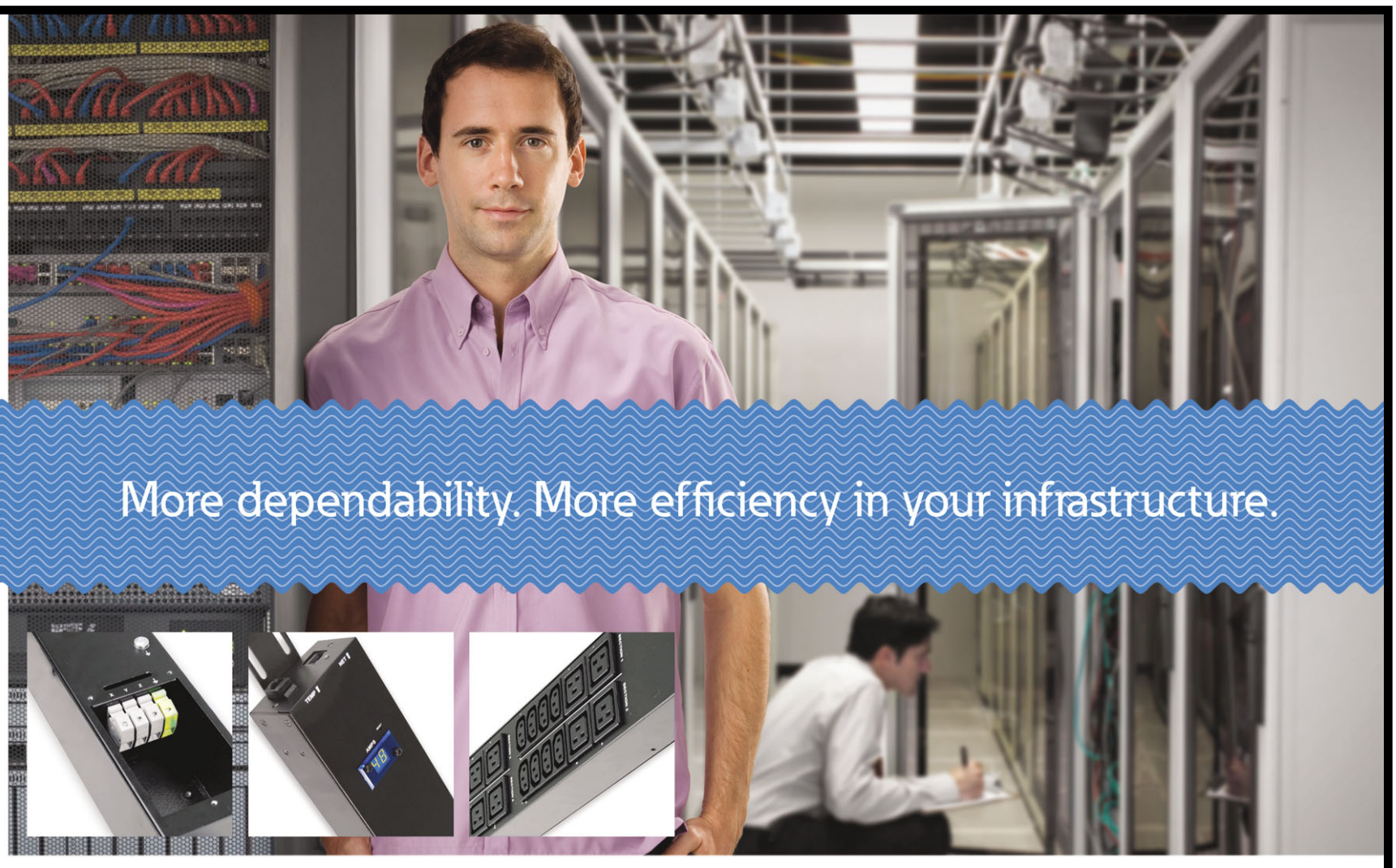
www.avtech.com



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CASE STUDY

Moving Backups To The Cloud

Museum Picks CoreVault Because Of Its Well-Organized Operations

by Sue Hildreth

• • •

Running the nightly backup is a familiar chore for data center managers. But the nightly backup usually involves much more than that one nightly task. The backup has to be tested to see if it really worked, and tapes have to be rotated and replaced on a regular basis. If the organization has an off-site storage facility, IT also has to send its backups to that facility. Added together, handling tape backup in-house can be a time-consuming and occasionally frustrating exercise, especially for SMEs with fewer IT employees to spare.

Until two years ago, the National Cowboy & Western Heritage Museum in Oklahoma City safeguarded its inventory of images, publications, and financial data with a nightly tape backup. The museum, which is host to an internationally known collection of U.S. Western art and artifacts, engages in research and produces a quarterly magazine as well as other publications. Its collection of digitized content includes more than 160,000 archive images and 400,000 records as well as operational data such as financial records, spreadsheets, and email.

To safeguard all of that information, the IT staff did the evening backup and checked each morning to see if it had been successful. Afterward, another IT employee would carry the tape back to her house, which served as a rudimentary disaster recovery center. The amount of time spent on the backup was taking away opportunities for the IT staff to work on strategic projects, yet it still didn't guarantee the safety of the museum's data.

"It'd be a crapshoot in the morning as to whether the backup had run. Sometimes you'd find a cassette had failed, or the head needed cleaning. Checking the integrity of the backup was always a hassle," says Brian Garrison, an information technology employee for the museum.

Susan Adams, assistant director of development for the museum, joined the organization in 2007. She remembers how time-consuming and inefficient the process was. "I thought, what a huge weary task to lug those tapes home every night. Also, while it was a remote location, it wasn't temperature controlled or fire safe," says Adams, who began looking for other options with the staff.

Selecting A Storage Service Provider

One of the options the museum considered was purchasing a server and software and colocating it elsewhere. The lack of money for a large up-front investment, however, ruled out that option and led the museum to start evaluating storage service providers.

The advantage of a service provider, in addition to saving the museum a large investment in hardware and software, was that a service provider could also free up the IT staff from handling backup maintenance and upgrades. So the museum wanted a provider that was reliable and well-maintained. Museum IT employees looked at some providers that offered multiple types of services, not just backup services, but felt the museum wanted a company that focused only on storage. Resellers were also ruled out, says Adams, because the museum wanted to deal directly with the provider.

The museum decided on CoreVault's hosted cloud storage service. CoreVault (www.corevault.com), which is also based in Oklahoma City, provides online storage to companies in 33 states from its two SAS 70-certified data centers. Adams says that when she toured CoreVault's facility, she was impressed with its well-organized operations.

"Everything in the IT room was ordered [and] clean—the cables were all labeled [and] the design had obviously been given a lot of thought and preparation. That said to me they were in it to provide consistently high levels of service," Adams says.

CoreVault's partner, Asigra (www.asigra.com), provides the cloud-based backup and recovery software behind the CoreVault system. One of the key aspects of the Asigra Hybrid Cloud Backup and Recovery software is that it was designed with a multi-tenant architecture, which saves on server space by letting customers share an instance of the same application. That means the provider does not need to separately host different instances of the same software.

It is also agentless, so it does not install software agents on the devices it backs up, but it looks to an internal directory to locate the correct hardware, folders, and file types. The agentless design reduces the processing overhead on the devices, and it does not need to contact and update its clients.

Installing and configuring the CoreVault software and transferring the museum's data took about four days and was nearly problem-free, except for one initial problem getting the GroupWise email server to back up. CoreVault installed the initial software, a CoreVault Client and Administrator Console, by pushing it out to the museum's workstation. That console is how museum staff sets backup policies and retrieves most files. CoreVault also provided a portable hard drive (aka a mobile vault), which Garrison used to copy over all of the initial backup files. The initial transfer is done locally to the mobile drive to save on bandwidth. That drive is sent back to CoreVault. Garrison also inventoried the network devices, folders, and file types he wanted to be backed up and sent that to CoreVault.

Garrison could then set the museum's backup preferences, such as the frequency and times of backup, and start the service.

"After we did the first backup to the local mobile vault, [administrators] took that back to CoreVault, and the next day we started running backups. It was fairly slick," Garrison says.

Cloud-Enabled Economies

The cloud-based architecture has enabled CoreVault to use more efficient combinations of hardware to store data and thus lets its customers have more flexibility in storage options. Customers can choose one or more tiers of storage, depending on how fast they need to be able to access the stored data and how much they can afford. A typical plan is to store the most recent backup in the Online tier for quick access and the slightly older backups in the Nearline tier, which can take 30 minutes to retrieve using a Web interface. The least expensive tier is Offline, and customers might have to wait a day to gain access to that archived data.

The museum had been using Online storage, which includes file compression and

CASE STUDY

Expertise For Hire

Financial Institution Has Experts On Call Through Azaleos' Managed Exchange Services

by Robyn Weisman

• • •

Greenhill & Co. is a rarity these days: a successful global investment bank with offices in nine of the major financial markets in the world, including New York, Toronto, Frankfurt, Tokyo, and London. The firm specializes in merger and acquisition transactions and has worked on some of the biggest deals of the past few years, including Delta Air Lines' merger with Northwest Airlines.

But Greenhill (www.greenhill-co.com) fits the profile of many SMEs in that it has full-time staff of only five IT professionals for its more than 250 employees. In other words, the firm has almost twice as many offices as it has full-time staff. John Shaffer, director of information technology at Greenhill, says his department hires consultants who will help out individual offices; nevertheless, he acknowledges his department is pretty lean relative to the firm's size.

"Our company has grown, but our IT staff hasn't, and that's why we look to [other] companies to outsource functionalities or to bring in managed services," says Shaffer.

According to Shaffer, Greenhill wanted to outsource its Exchange server management without having to outsource the Exchange server itself. "We still want to own our equipment. We do a lot of calendar sharing, and I don't know if this will work as well when going over slower links" of a purely hosted Exchange service. And because Greenhill's business dealings are subject to strict compliance regulations, Shaffer was reluctant to lose direct access to the server.

As a result, Greenhill decided to use Azaleos Managed Exchange Services (www.azaleos.com) to manage its Exchange server needs, including a migration from Exchange server 2003 to Exchange Server 2007. "No other company out there does exactly what Azaleos is doing, where I can host the system, and they manage it," says Shaffer.

Exchange Expertise At A Fixed Fee

Shaffer says that having a 24/7 high-availability email setup has been a high priority for Greenhill. The firm had been successful managing the Exchange environment on its own, but doing so required a great deal of work on the part of his IT department, and Shaffer was looking for relief in this area.

Yet hiring a dedicated Exchange expert did not seem like a good option for several reasons. "Not everybody has the same understanding on how these systems work. To me, it didn't make sense to hire somebody who was focused on Exchange full-time because most of the time it works," Shaffer says. "That person would have to be real comfortable doing other things, and sometimes that's not so easy."

In contrast, Azaleos employees ran Exchange environments at large companies, such as AIG, and could offer the sort of expertise that Greenhill needed at a fixed fee. "I know what my costs are going to be for the next year to get all that expertise, and we have 24/7 access to people who know Exchange way better than we would be able to," Shaffer says. "I can take a vacation, and anyone [in my department] with any level of expertise of Exchange can call Azaleos. It's better than sitting on the phone for half a day with Microsoft."

The level of support Azaleos offers almost seems too good to be true. "You ask them a question, and you get the answer. There's no, 'I gotta go look this up,'" Shaffer says. "They just know the answer. That, to me, is huge."

Proactive Help

Azaleos offered Greenhill the sort of attention to detail that Shaffer's department could not have provided on its own. "I get email once in a while about things like, 'Hey, these BlackBerry users haven't checked in in 1,000 hours. Is there something wrong with them?'" Shaffer says. "And we learn that [these users] are still active but no longer with the company. [Azaleos is] finding these nitty-gritty things that maybe aren't critical but in the end are pretty cool because of this attention to detail."

In addition, Azaleos tests everything in its environment, which took a lot of pressure off Shaffer's department. "One of the things we didn't do religiously was patch servers because you get nervous about touching something that's in production," Shaffer explains. "If we patch it and it breaks, we put ourselves in a real bind, and we have to then figure out how to get ourselves out of it."

By letting Azaleos test Greenhill's Exchange environment, Greenhill is able to keep its Exchange environment up and running. "This proactive approach has been a huge benefit for us," he says.

More Than Just Management

Pleased with his experience with Azaleos Managed Exchange Services, Shaffer ended up purchasing additional services. For example, Greenhill now uses Azaleos' archiving service that works to reduce mailbox size while at the same time allowing for more unlimited mailbox size, making the Exchange system more nimble than it had been in the past.

Shaffer is especially pleased with the way Azaleos handled Greenhill's migration

deduplication to reduce the amount of space used. After nine months, Adams and Garrison realized storage demand was exceeding their projected budget for the year. The problem wasn't that the compression and deduplication hadn't worked, but that employees had been encouraged by CoreVault's ease of use to scan in more images of the museum's collection. Also, says Garrison, the IT staff had underestimated how many edited versions of the same picture there were. Magazine staff, for instance, might edit a photo several times, saving each one under a different name.

"We had expected that we'd be at 400GB worth of data at this time, but we're actually close to a terabyte right now. We discovered that publication staff have multiple copies of images. They might alter the color on one, keep another one raw, turn this one into a JPEG," Garrison says, noting that they are also working with users to identify files that don't need to be backed up and asking them to transfer those to a separate network folder to save space. "We're getting users to realize that not every single one has to be backed up."

Analyzing Storage Content

After analyzing its storage content with the help of CoreVault, the museum opted for a plan that moves files off of the Online tier into Nearline after 30 days and then into Offline after a year. The cost decreases by one-third with each successive tier, letting the museum stay closer to budget.

The museum also maintains one local copy of the most recent backup on its CoreVault workstation in cases where a quick retrieval of a new email or document is required.

"Because our backups run through our workstation here with the CoreVault client, it means we can also keep the most recent backup on the local hard drive," Garrison says. "So in some cases, we can pull a file off of that without having to go to the CoreVault system."

Adams says the fees the museum is paying now are slightly more than they were before the move, but she notes the cost doesn't factor in IT productivity now that the IT staff can work on other museum projects. Also, she says, had the museum stayed with tape, it would have had to invest in new servers and storage software, which would have been considerably more costly.

Asigra Executive Vice President Eran Farajun says customers who move to a cloud-based storage environment save anywhere from 30 to 60% in annual costs, depending on their original storage solution.

From Adams' perspective, the costs are important, but the real issue was making sure the museum's publications, financial data, emails, and the images of its exhibits would be preserved in the event of a disaster. "We're a Smithsonian-class institution, and it makes no sense for us not to have the quality of backup services as we have in the quality of the things we're charged with protecting." P

CoreVault Hosted Cloud Storage

An automated, daily offsite backup, encryption, and data recovery service operated from two secure data centers by a SAS 70 Type II-certified provider.

"After we did the first backup to the local mobile vault, [administrators] took that back to CoreVault, and the next day we started running backups. It was fairly slick," says Brian Garrison, an information technology employee at the National Cowboy & Western Heritage Museum.

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to Exchange Server 2007. "Azaleos did the whole thing for us. I did the planning, and they built the systems," says Shaffer. Greenhill paid what he considered a nominal consulting fee for this work.

Azaleos worked out the migration plan, moving Greenhill's users at night depending on the location. "It was extremely seamless. Even things like BlackBerry worked. You came in the next morning, and nobody knew anything about being moved," Shaffer says.

Shaffer reiterates that Azaleos' intimate knowledge of the Exchange ecosystem puts it far above its competitors. Shaffer acknowledges that his staff could have performed the migration, but he was not looking forward to doing so. "The Exchange 2007 environment has a new set of challenges, and I don't know that I was set out to go through the whole learning process to do it," he says. "I prefer to manage the project, and I did with a number of [Azaleos'] really good people."

Azaleos Evangelist

Shaffer is completely sold on Azaleos and has since implemented the new version of Office Communications Server that Azaleos built for Greenhill. Shaffer has even brought Azaleos new clients. "I was a reference customer for a law firm down in Florida," says Shaffer. "I was talking to the guy about some totally different product, and he started to mention that he was going to be implementing Exchange 2007. 'Have you ever done that?' I said. I told him it was really tough work [and that he] ought to look at these guys that I decided to use, and the guy got really excited. [His firm is] a customer of Azaleos now."

Shaffer points out that no matter what research and preparation one does before agreeing to subscribe to a vendor's services, no one can predict the outcome. "They want you to stick on for two or three years, and you're reluctant to do that with anybody because what if they don't turn out to be what you want, and you're stuck with them?" he says. "But Azaleos is really an extension of what we do, and it's just gone extremely well." P

Azaleos Managed Exchange Services

Managed 24/7 services for Microsoft Exchange servers that include real-time monitoring and reporting of a user's physical or virtual Exchange environment. Offers seamless management of BlackBerry and other mobile devices, filtering against malware, and high-availability services to prevent email outages.

"You ask [Azaleos] a question, and you get the answer. There's no, 'I gotta go look this up.' Azaleos just knows the answer. That, to me, is huge," says John Shaffer, director of information technology at Greenhill.

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Real-Time Testing & Monitoring

Napatech Adapters Ideal For Network Security & Optimization

by Joanna Safford

• • •

Offering cost-effective, data processing power, Napatech's NT4E and NT4E-STD In-line Adapters are designed for OEM network appliance vendors focusing on the benefits of a cost-effective server platform. These adapters feature capabilities that are ideal for network performance monitoring, network security, and network optimization overall.

NT4E Adapter

The NT4E is known for its processing and transmission of packet traffic for up to four layers of traffic analysis and filtering. To bypass the OS and maintain CPU performance, it transfers the appropriate traffic to applications without affecting CPU load. Adapter-to-adapter time synchronization connects to the NTTSU (Napatech Time Sync Unit) designed to support GPS functionality. To increase CPU cache performance, the NT4E provides both flow and frame classification via hash key.

NT4E-STD Adapter

As a 4 x 1 Gbps PCIe standard adapter, the NT4E Adapter provides maximum throughput and comprehensive integration. Built for standard server solutions, the NT4E features four Ethernet ports available in four electrical or four optical interfaces.

Erik Norup, Chief Marketing Officer for Napatech, says "Napatech constantly adds new features to our product range, and upgrades to new features that are free of charge enabling even a small appliance builder to move quickly and keep up with large competitors.

Apart from the Napatech pricing structure and level, the Napatech adapters have far larger feature sets than any competitive off load or acceleration adapters on the market," Norup says.

Overall, both the NT4E and the NT4E-STD support full throughput for all packet sizes.

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Cloud-Based Email Management

TeamLogic IT Email Archiving Offers Fully Managed Approach

by Blaine Flamig

• • •

Not every small or medium-sized enterprise has the financial or IT resources to throw at managing and

maintaining an on-premise email archiving system, although such a system is precisely what every SME should possess in the face of ever-increasing regulatory and legal requirements. For SMEs lacking such abilities, there's TeamLogic IT's new Email Archiving, a fully managed SaaS-based solution that assists companies in meeting various compliance and HR regulations.

According to data from Gartner, email volume has grown by 500% during the past decade, translating into increasingly more storage and operational hurdles. Chuck Lennon, TeamLogic IT president, says, "Consider the increased legal and regulatory requirements, and you can understand why Gartner recommends that every organization should archive its email."

Beyond making the process of managing a company's mailboxes easier, the Web-based Email Archiving service reduces storage costs while securing data and intellectual property, enforcing corporate policies, and speeding up legal discovery.

In addition to speeding up such requests, Email Archiving takes the responsibility of daily archiving tasks off the SME's staff and puts them on TeamLogic IT's staff instead. Further, the service entails no hardware or software purchases and requires no long-term implementation cycle or learning curve.

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FEATURE PACKAGE

Data Center Projects On A Budget
If your enterprise is like most, chances are you could always benefit from saving a little extra money when undertaking new data center projects. We rounded up some tips and tricks to help.

Affordable Cooling Strategies | 22
■ With some determination and old-fashioned know-how, it's possible to one-up heat without further dwindling your budget.

4 Ways To Save With VoIP | 23
■ As enterprises consider implementing VoIP technology, they are forced to consider ways to cut costs while trying to balance the best solution in the meantime.

Adding New Storage Frugally | 24
■ IT has a responsibility to make sure it is adding storage wisely and using what is already there in a cost-effective manner.

Stretching Security Dollars | 25
■ Here are some tips to stretch your network security dollars without compromising the security that is so vital to your business.

Affordable Cooling Strategies

Boosting Cooling Efficiency Doesn't Always Mean Breaking A Data Center Budget

by Christian Perry

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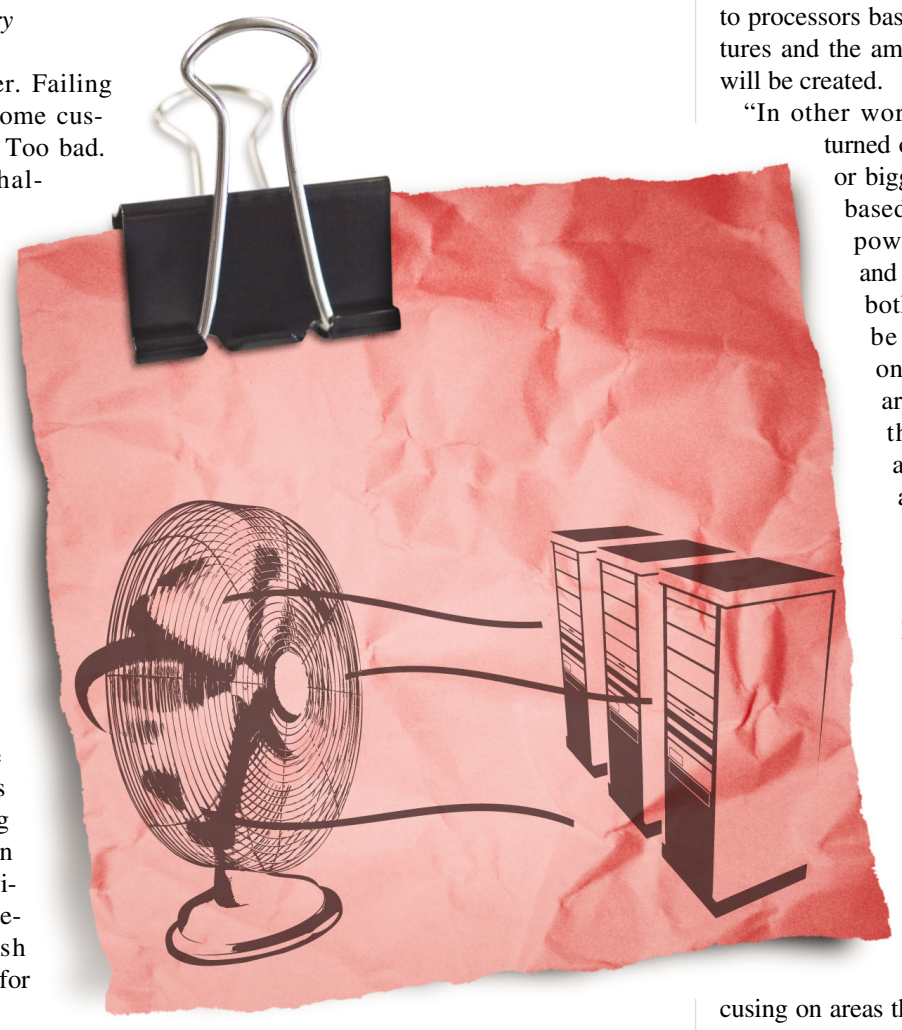
Heat is a tough customer. Failing economy? Too bad. Lost some customers? Too bad. Layoffs? Too bad. Regardless of business challenges, heat rarely grants any leeway to data centers. Yet with some determination and old-fashioned know-how, it's entirely possible to one-up heat without further dwindling your budget.

"Implementation and diligent enforcement of relatively simple concepts such as aisle containment and optimization of current cooling systems allow data centers to support higher densities without necessarily upgrading the cooling systems. [Companies can] make the appropriate improvements to efficiency in-house using many materials that can often be found in a data center environment or a home improvement store," explains Josh Sayers, operations engineer for Latisys (www.latisys.com).



Benefit Through Blanking

Although vendors may try to convince otherwise, addressing heat problems doesn't always require a huge capital outlay—if any money at all. Chris Loeffler, global applications manager for Eaton Data Center Solutions (877/785-4994; www.eaton.com/powerquality), says that one of the least expensive methods for improving cooling efficiency is blocking any cable cutout holes or openings in a raised floor that weren't originally designed for the floor. Data center personnel can also apply this philosophy to server cabinets.

"The quickest and potentially cheapest way to improve cooling is to install blanking material in cabinets to block any empty U space on the front side of the cabinet," Sayers says. "With no budget, you'll need to be creative. For example, if you can't purchase commercially produced blanking panels, look around. There are typically plenty of server boxes that make great blocking material in a pinch."

Loeffler also recommends identifying "orphaned" equipment, such as servers and other IT gear, that aren't currently in use and uninstalling them if possible or at least shutting them off. Further, check all servers to ensure that any built-in power-saving functions are in use. According to Loeffler, many older servers have power-saving features, but they may have been shipped with the features turned off.

A Scientific Approach

Data centers can also employ the use of software to control power consumption and cooling based on the heat profiles of different processors. For example, Partha Ranganthan, distinguished technologist at HP Labs (www.hpl.hp.com), recommends using software to direct different computing tasks to processors based on the current temperatures and the amount of expected heat that will be created.

"In other words, processors would be turned on and off or given smaller or bigger amounts of work to do based on policies that balance power and cooling resources and needs. Similarly, servers—both virtual and real—could be assigned work based on sensing the temperature around them and could use thermo-fluids policies to achieve a balance of power and cooling. This would result in the data center cooling resources operating at an efficient operating point," Ranganthan says.

Ranganthan also suggests that IT managers consider combining sensors with control nodes that adjust the distribution of cooling resources according to the needs of the IT equipment. Using this strategy, data centers can optimize cooling by focusing on areas that truly need to be cooled. Ranganthan says that by using a similar technique, HP Labs has reduced the power required to cool data centers by 30 to 60%, depending on facility infrastructure.

It's Curtains For Heat

One of the most common methods for boosting cooling efficiency without adding expensive hardware or infrastructure is the use of a hot aisle/cold aisle approach. Although cabinet manufacturers are increasingly building cold- or hot-air containment systems that have walls between the cold air intake side and the hot air output side of IT equipment, Loeffler points to a less expensive method used by the food and shipping industries.

"Flexible plastic curtains are placed above the racks or on the end of the rows, from the top of the rack—or floor—all the way to the ceiling, separating the hot and cold air. One thing that does need consideration with this is that you don't disable parts of your fire suppression system by adding in the curtains. So make sure your plan includes updating the fire system to meet code requirements, as well," Loeffler advises.

Embrace Warmth (To An Extent)

Data centers struggle daily with the battle against heat, but for some, that battle might be in vain. According to Harry Schechter, founder and CEO of Temperature@lert (866/524-3540; www.temperaturealert.com), you can cut back on cooling costs by simply raising the temperature in your data center. In fact, for every degree higher, you'll realize about 4% savings on your energy bill. Loeffler agrees, adding that many sites are overcooled because they keep racks at 65 degrees Fahrenheit, for example, when servers might be fine at 75 F.

To properly gauge the safe limits of hardware, Loeffler suggests conducting temperature monitoring and failed unit testing. "Test if you still have full cooling capacity even if you lose a cooling unit. If so, and you have no issues with hot spots, raise the room temperature to something inside the ASHRAE limits, which are being raised higher. In addition to added cooling capacity, you will not have to do so much humidification because you won't be drying the air so much," he says. P

Key Points

- Methods for boosting cooling efficiency, such as blocking cutout holes and using blanking panels, need not cost much, if anything at all.
- Employ a hot aisle/cold aisle approach to maximize the cooling efficiency in server rows and consider using plastic curtains to optimize the approach.
- Battle heat with heat—test to determine the safe limits of hardware and increase the temperature in the data center accordingly to save on cooling costs.

Additional Money-Saving Tips

Data centers in search of budget-friendly cooling methods don't have to dig deeply to strike oil—there are plenty of solutions available for environments of all sizes. Chris Loeffler, global applications manager for Eaton Data Center Solutions (877/785-4994; www.eaton.com/powerquality), and Harry Schechter, founder and CEO of Temperature@lert (866/524-3540; www.temperaturealert.com), offer the following quick tips.

- Replace or retrofit existing cabinets with a ducted air approach.
- If there is open access between existing racks, add air dividers and front-to-rear air dams (foam weather stripping).
- Use virtualization to consolidate hardware and possibly even shut down servers when usage is low.
- Consider using outside air cooling, depending on location, through the use of air-side or water-side economizers.
- Consider sending commodity-type functions (such as email) out of house to lessen the burden on in-house equipment.
- Design a plan based on measurements and metrics and be sure to install metering systems on the power feeds to the IT and cooling equipment.
- Update outdated facilities equipment. Newer equipment is more efficient and may qualify for government rebates.

4 Ways To Save With VoIP

Get The Most Out Of Internet Telephony In Tough Times

by Chris A. MacKinnon

• • •

Today's economy is squeezing every penny it can out of the data center—even Internet telephony is feeling the squeeze. As enterprises consider implementing VoIP technology, they are forced to consider ways to cut costs while trying to balance the best solution in the meantime. The good news is it's possible—according to VoIP manufacturers and industry experts. Here are four ways that SMEs can save money when undertaking a new VoIP project.

Take Advantage Of What VoIP Has To Offer

Make sure to uncover all the benefits of using VoIP that can add real value in addition to cost savings. Chris Maxwell, director of Voxeo Labs (www.voxeo.com), says it's important for IT and data center managers to look to unified communications applications that integrate a variety of modalities, including voice, video, presence, conferencing, and text to streamline communication. He elaborates, "Companies can take advantage of new instant messaging and SMS capabilities that are available now with VoIP or integrate voicemail with email and combine email contact lists with phone lists by doing so."

Maxwell says data centers should consider using softphones for remote workers or even employees at headquarters to cut costs. He says a good headset can usually overcome quality concerns when using a computer as a primary phone.

SIP trunking should also be considered as an alternative, according to Matthew Kovatch, vice president of sales at Taridium (www.taridium.com). "Depending on your call volume, a complete new VoIP business phone solution can be paid off within six to eight months by reducing telephone costs alone," Kovatch notes. "Some companies . . . offer comprehensive consulting and legacy migration programs that tie into your existing infrastructure."

According to Kovatch, investing in open-standards VoIP may not be a bad idea, either. "Handsets, for example, can make up to 80% of initial hardware cost, and if you choose a proprietary vendor, you might be tied to the vendor forever with expensive and inconvenient hardware upgrades," he says. "And consider a managed VoIP service if you are concerned about acquisition costs." Kovatch says a managed service combines the reliability of an on-premise open-standards VoIP telephony system with the convenience of a simple monthly fee for equipment, phone service, and support.

Choose Your Infrastructure Wisely

Maxwell says starting with an IP PBX (Internet Protocol private branch exchange) is a good idea. "Companies can get their feet wet by trying out an IP PBX," he says. "Many small to medium-size enterprises are finding free, open-source PBXes . . . and many other bundled IP switch technologies are becoming increasingly stable, more widely used, and highly functional. It's possible to implement some of these devices quite easily and cheaply. The benefit is low cost; the trade-off may be in installing and configuring the software yourself."

In Maxwell's opinion, considering your existing phone lines is also a good idea. "There are devices such as media gateways and ATAs (analog telephone adapters) that serve as converters from analog phone lines to SIP-based VoIP lines," he says. "This allows companies to keep their current telephone provider, infrastructure, and phone numbers while serving VoIP to local and remote locations using ATAs. In fact, if you have a WAN between two offices, it's possible to bring in calls to a single location, convert the calls to VoIP, and send the calls to remote locations via SIP to be answered by remote employees."

Glean From Reports & Monitoring

Criss Scruggs, senior manager of product marketing at NetIQ (www.netiq.com), says that now, more than ever, organizations are being asked to demonstrate the value and return of each new investment. So how do organizations justify their VoIP expenditures while saving money simultaneously? "While not really a trade secret, reporting is the way to accomplish this task," Scruggs says. "You

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Key Points

- Consider SIP trunking and open-standards solutions, which can offer quick returns on investments.
- Reporting can help justify VoIP expenditures while saving money and can help SMEs to proactively address call-quality issues that will impact business performance.
- By spending your money wisely on assessment, monitoring, and reporting, you will achieve the best system performance and quality of experience for your users over time.

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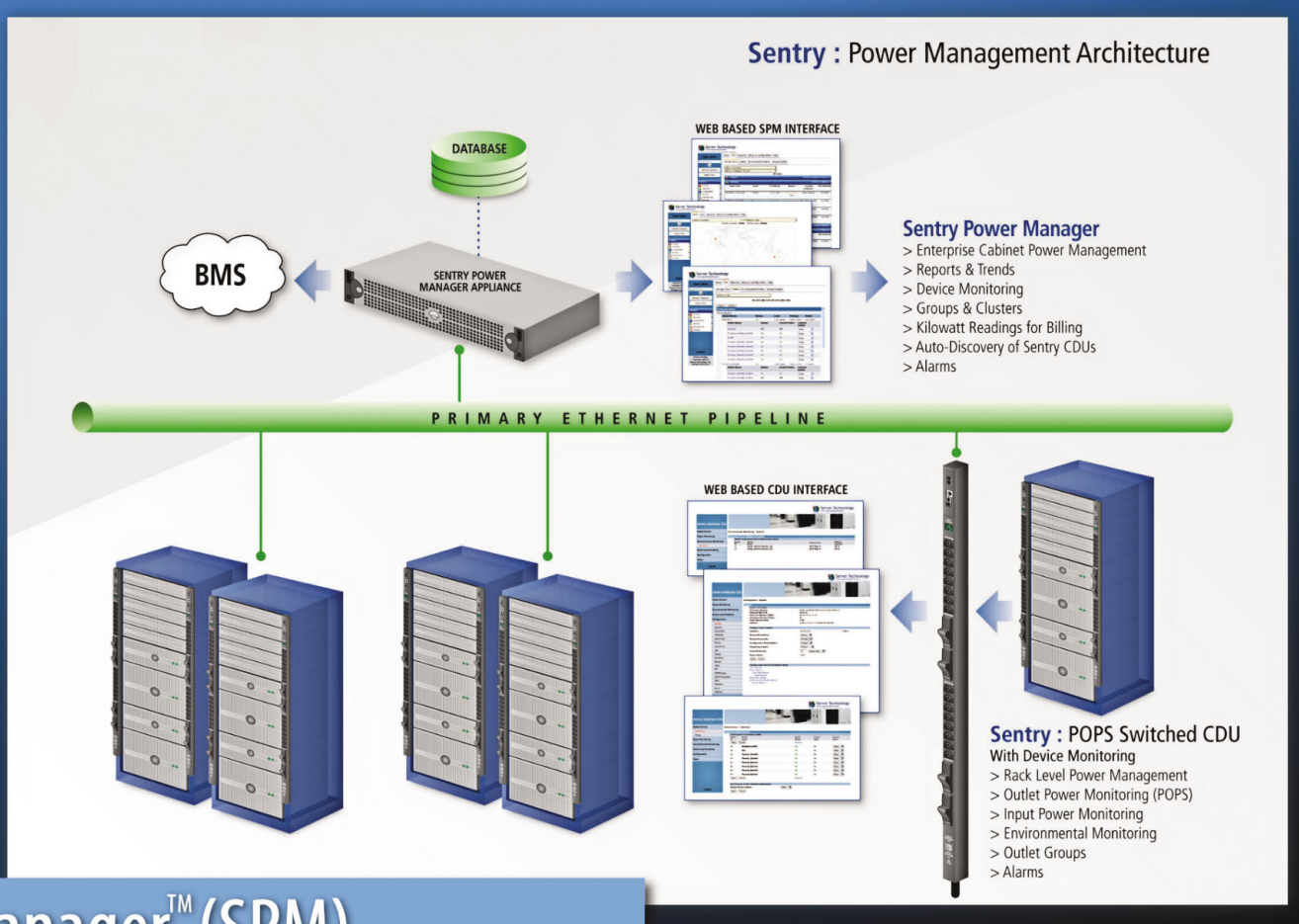

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Adding New Storage Frugally

Even In Times Of Tightening Belts, New Storage Systems Are Possible

by Drew Robb

• • •

With the economy on everyone's mind, adding new storage to an existing data center can be a challenging process. Strict budgets and a tendency to nix already greenlighted projects can make it difficult for IT to gain the dollars to move forward.

Key Points

- Assess your existing storage capacity and your needs before purchasing additional storage.
- Storage tiering provides a pathway to reduced overall storage costs.
- Modeling software highlights where more storage is needed and where more utilization can be eked out of what is already there.

In such times, though, IT has a responsibility to make sure it is adding storage wisely and using what is already there in a cost-effective manner. And even though SMEs might not be able to afford the latest and greatest gear available today, there are smart ways to implement upgrades to gain maximum bang for the storage buck.

Only Add When Necessary

The cardinal rule in the modern climate is not to add storage that you don't need. Obvious as it seems, it is one of the most commonly abused rules based upon an entrenched overbuilding mentality. As result, there is usually an abundance of unutilized storage sitting around the data center.

"Companies need to ask if they know what their capacity utilization is," says Jim DeCaires, storage product marketing manager at Fujitsu America (www.fujitsu.com/us). "They also need to understand how effectively they are using their storage and if they can capture unused capacity. Most storage capacity is underutilized."

Before requesting the purchase of additional storage, IT should achieve an understanding of current utilization. It can be very embarrassing—and financially damaging—if management finds out it just spent $50,000 on storage hardware it didn't need. Such a discovery can make it all but impossible to gain approval for further purchase orders.

"Understand what your applications, databases, and end users really need from a capacity and performance perspective before adding new storage," says Tim Arland, principal consultant for storage solutions at Forsythe Technologies (www.forsythe.com).

On the other side of the coin, if management sees that IT avoided a major storage addition via some diligent homework, it will look far more favorably on the next request for more capacity.

Avoid Vendor Lock-In

Vendors often offer sweet deals for large packages of storage hardware, particularly when their gear is all that remains. The problem here is that you are then tied to that vendor for service contracts and upgrades. That can actually result in longer life cycles and more costs in the end as you are either legally tied in to that vendor or are faced with a substantial up-front investment to replace your hardware entirely.

The best strategy is to own storage gear from a couple of vendors so you can play one against the other. Such a scenario typically results in good deals from all sides.

"Use vendors against each other to create a balance in the bidding process to get your best pricing," says DeCaires. "Understand pricing models from vendors, be aware of technology complexity that obscures pricing, and carefully examine all the elements of technology packages to ensure you are buying only what you really need and want."

Avoid The Latest & Greatest

Vendors generally blow the trumpet loudly for their new wares. But these products usually need to have the kinks knocked out of them, and it can be a year or two before they truly are enterprise-ready. That's why large companies are often very conservative when it comes to storage: They tend to stay a generation behind the development curve in order to deal in only the most stable platforms.

Fibre Channel over Ethernet, or FCoE, and solid-state drives are examples of technologies being touted heavily in the press, but they may not be the best way forward for a budget-constrained SME. However, that doesn't mean that there are not some newer developments that can add value and help save on storage without entailing too much risk.

"New technologies should be approached with caution," says DeCaires. "Companies should understand the hype and the reality. New and fairly new technologies that add value and can save on new storage include storage virtualization, thin provisioning, deduplication, and software storage management that delivers utilization monitoring and charge-back features."

Implement Tiered Storage To Reduce Costs

Storage tiering offers a way to boost performance for the most crucial applications while reducing storage costs overall. Tier 1 should be a small amount of the total data set that is mission-critical. That tier gets the best hardware and the highest performance. Another one or two tiers can then be set up using lower-cost disks for the bulk of the organization's applications.

"Only buy the highest-performance storage based on the latest and greatest offerings from the manufacturer for the top tier," says Arland.

Money-Saving Tip: Model Before You Install

Before purchasing and installing more storage, it is important to create a model to determine where the added storage capacity will go and how it will be powered and cooled.

"Utilize modeling software to model the addition of the equipment to see how to install it for the best usage," says Steve Yellen, vice president of market strategy for Emerson Network Power's Aperture Technologies (www.aperture.com).

Modeling might even highlight the fact that there is plenty of unused storage capacity available to other systems that could be reallocated rather than adding more storage. Alternatively, it can highlight such factors as the lack of adequate power for an intended storage acquisition or even a lack of space for next year's server farm expansion if current storage buys move forward.

"If you add lots of storage, it might take up all the power so you can't do the server expansion as planned, for which you added all that storage in the first place," says Yellen. "To avoid ending up with idle storage, you need to model it fully and ensure that purchase is aligned to the overall direction of the business."

4 Ways To Save With VoIP

Continued from Page 23

should already be doing this for your critical applications, and by extending existing reporting capabilities to the VoIP network, you can not only demonstrate service levels, but also rapidly identify and resolve call-quality issues. In addition, reporting can be leveraged as a capacity-planning tool for the next phase of your VoIP implementation."

Scruggs adds that proper diagnostics and reporting not only save money, but also help SMEs to proactively address call-quality issues that will impact business performance and tangibly demonstrate the value of VoIP. "By wrapping reporting into your standard VoIP rollout, you can avoid future downtime for end users, justify to your customers the call quality and service delivery metrics as needed, and prevent business stakeholders from questioning the value of your communication investments," he says.

Scruggs also says that deploying a complex communications system across your network should not occur without proper monitoring for the proof of concept and post-deployment phases, which does present up-front costs but saves considerable cost over time. He says it is not uncommon for distributed organizations to believe their networks are prepared to adequately support VoIP and deliver the QoE (quality of experience) and service that users have come to expect with traditional telephony.

On the other hand, he says research shows that nearly 70% of those actively researching VoIP monitoring solutions are doing so after deployment in response to significant increases in trouble tickets and service quality complaints. "In today's economy, most organizations cannot afford these issues, as they can result in lost revenue," Scruggs notes. "Deploying a monitoring system after your initial VoIP implementation can be time-consuming and costly."

Handle Your VoIP Network With Care

What do VoIP and cars have in common? Scruggs says that, when properly maintained, both VoIP networks and motor vehicles can deliver incredible benefits that far exceed the maintenance and purchase costs. "For example, by following the manufacturer's maintenance timeline and due diligence recommendations, you can make your car last over 250,000 miles by offsetting future, larger issues and making the most of your initial investment," he says. "The same is true for VoIP. By spending your money on the right things from the get-go—assessment, monitoring, and reporting—you will achieve the best system performance and QoE for your users over time."

By not following this proper management path, Scruggs says the chances of sporadically paying much larger amounts to fix issues and potentially needing a major system overhaul increase dramatically. "These very issues and hidden costs can be easily avoided with proactive management, which may be an additional cost up front but will save significant funds in the long run."

Top Money-Saving Tip: Conduct A Proper Network Assessment

Conducting a comprehensive (and relatively inexpensive) network assessment will provide the necessary information to avoid both under-engineering and over-engineering the network to meet your specific needs, according to Criss Scruggs, senior manager of product marketing at NetIQ (www.netiq.com). Scruggs says to make sure your network can adequately support VoIP; assessing it prior to deployment is key to helping you save money in the long run. "You will not only reduce the risk of overspending on equipment, but have access to the data you need to properly plan your deployment," he says. "By assessing your network, you reduce the risks associated with poor quality post-deployment and therefore the likelihood of spending money on services to diagnose and potentially reconfigure the system."

Stretching Security Dollars

Improve Your Network Security On A Budget

by Sixto Ortiz Jr.

• • •

Network security is a critical area of an enterprise that must never be overlooked. Today's corporate networks are brimming full of confidential, business-critical information that is invaluable and will cost a company immeasurably if it is ever compromised. Beyond the obvious accounting costs, security breaches also pack hidden costs to a company's standing and reputation.

In today's difficult economic climate, however, organizations are also facing reduced budgets. In this environment, stretching every budget dollar is absolutely critical: There is no margin for error and no upper management tolerance for costly experiments that don't work and fail to deliver a solid return on investment. Read on to learn some quick ways to stretch your network security dollars without compromising the security that is so vital to your business.

Understand What You Have

A key part of the process of providing good network security is gaining an understanding of what you have and the assets you must protect. Without that knowledge, it's easy to make costly mistakes such as investing in security technologies that don't make sense for your company and leaving critical business information unprotected.

Gary Lefkowitz, director of marketing and opportunities for HP's Secure Advantage, says that the first step to affordable security is a thorough assessment of possible risks. According to Lefkowitz, this assessment should determine an organization's "risk profile" by taking into account threats, threat probabilities and vulnerabilities, the potential impact to the business, and key performance indicators. In other words, identifying the areas where the need is greatest is essential to making sure security dollars are spent where they make the most sense.

Doing a risk assessment may even identify cost savings that were not obvious before. Kevin Prince, chief technology officer at Perimeter eSecurity (www.perimeterusa.com), says taking the time to do a complete risk assessment may reveal that what is getting done today may not be providing the benefits once thought. Risk assessments, adds Prince, should identify security gaps and help to identify the best solutions to mitigate risk.

Avoid Multivendor Solutions

It may sound like a cliché, but doing more with less can result in real savings for your security budget. In this context, doing more with less means taking the time and effort to avoid purchasing multiple solutions from multiple vendors.

Dominique Levin, executive vice president of marketing and strategy for LogLogic (www.loglogic.com), says that instead of purchasing several point solutions from different vendors—security event management, log management, database security monitoring, compliance solutions—it is more cost-effective to buy a comprehensive solution from a single vendor that handles all of those tasks. "The organization can save money on the cost of the hardware and save time on employee training as well as implementation and management," he says.

Perimeter eSecurity's Prince says that if you haven't upgraded in a while, you may still be using a separate firewall, IDS, spam filter, or antivirus application, to name a few. UTM (unified threat management) devices, he adds, are a great way to get many layers of protection within a single device with the usual benefit of cost savings, such as reduced management and monitoring costs, data center space savings, and energy consumption. Energy consumption not only results in cost savings but can also result in a "green solution" that saves energy as an added benefit, Prince says.

Facilitate Cooperative Security

With so many security issues and so many solutions in the market, achieving a single-vendor, single-solution state may not be possible in all situations. That being said, when looking to identify security solutions for your enterprise, it is essential to purchase equipment that "plays nice" with other vendors' equipment.

Michael Rothschild, senior manager of solutions marketing at Juniper Networks (www.juniper.net), says any security solution should be able to have each of the solution components work together or cooperate in sharing information and rooting out the stealthy, sophisticated, and evasive attacks that are generally not detected with point security products. According to Rothschild, capital expenditures can be minimized when investments are made in well-integrated, open standards-based solutions. This approach, he adds, is key to achieving what he calls a "cooperative approach" to security.

"Each product you buy should work with the ones you already have (avoiding the 'rip and replace' approach) for a solution that gives you more than the sum of its parts," says Rothschild.

Ensure That Security Grows With The Business

Many times, enterprises wind up purchasing security solutions that become outdated or inadequate as soon as the company experiences significant growth. And the last thing you want to do is have to explain to upper management that the expensive security solution purchased three years ago is now wholly inadequate to support the business.

HP's Lefkowitz stresses that future growth should be taken into account when mapping a security plan. With data growing rapidly in today's enterprise, the need for corresponding security also grows quickly, meaning an enterprise's security solution must be scalable enough to grow with the business without requiring replacement or reconfiguration a year or two down the road.

Juniper Networks' Rothschild says that in today's environment, where new opportunities demand that new locations, audiences, and applications be constantly added to the network, the possibility of new threat vectors and compliance headaches is always there.

"The investments you make in your network today must enhance the business' agility in the face of such a dynamic economic climate," he adds. Selected security solutions must be designed from the ground up to support fluid changes in scale, application delivery, threat response, and compliance without the need to "rip and replace" whenever business needs change. Rothschild recommends that administrators seek out a pay-as-you-go deployment model that enables you to augment what you already have. In other words, security approaches should support increased business agility without the need to start over every time.

Key Points

- Performing a risk assessment is absolutely necessary if you wish to understand what needs to be secured and what the best purchases are to make.
- Although standardizing on as few vendors as possible is ideal, at the very least, security solutions that are open standards-based and work well with others provide you with the greatest chance for success.
- Security solutions must be able to grow with the business; otherwise, you run the risk of constant "rip and replace" exercises that waste time and money.

Top Money-Saving Tip: Educate Your Employees

Here is a simple yet often overlooked tip that can yield significant benefits without breaking the bank: According to Rene Poot, international systems engineer at NCP Engineering (www.ncp-e.com), administrators should educate employees on corporate IT policies. Most network breaches occur due to lack of employee knowledge whenever users bypass cumbersome polices, he says. Network administrators need to look at their policies, figure out how the technology is being abused, and educate employees on proper security protocol.

News

Nortel Head Resigns

Mike Zafirovski has resigned as CEO of Nortel Networks. He had been unable to save the company from a combination of the current economic climate and an accounting scandal that preceded him. An attempt by Zafirovski earlier this year to restructure Nortel under Chapter 11 bankruptcy failed and, as a consequence, the entire company is headed to the auctioning block. In a statement, Harry Pearce, chairman of Nortel, said that Zafirovski had made "great progress on many fronts," but, in the end, he and the company were victims of forces outside of their control.

Microsoft Sells Advertising Group

French ad giant Publicis Groupe is buying Microsoft's Razorfish, the second-largest digital advertising agency in the United States, for a price tag of $530 million in cash and stock. As part of the deal, Microsoft will continue to receive services for online advertising and marketing from Razorfish even after it has become a part of Publicis. Microsoft acquired Razorfish in 2007 when it took over the online advertising's parent company, Seattle-based digital marketing company aQuantive, for $6 billion. As a result of the acquisition of Razorfish, Publicis Groupe is expected to now obtain a quarter of its revenues from digital platforms.

T-Mobile Revenue Decreases

T-Mobile reported second-quarter service revenues of $4.77 billion, down from last year's second-quarter revenue of $4.85 billion. Verizon cites a lower amount of voice revenue as part of the cause. Data revenue in the 3G network, however, increased 23% over last year, and T-Mobile's G1 with 3G capabilities continues to sell well. T-Mobile says it added 325,000 new customers during the quarter, bringing its total customers to 33.5 million, with about 81% of those having contracts.

Mobile Carriers Rake In $10.6 Billion

According to numbers reported by consulting and advisory firm Chetan Sharma, mobile carriers in the United States pulled in $10.6 billion in data service revenue in the second quarter of this year. This represents a 30% growth from year to year, and it is the second consecutive quarter to reach the $10 billion mark. The study reports mobile data revenue at AT&T and Verizon Wireless grew by more than 8% apiece, and T-Mobile grew 6%. The report also suggests that the worst of the economic impact on wireless carriers might be over.

Microsoft Banned From Selling Word

A Texas judge ordered Microsoft to stop selling current versions of Microsoft Word, upholding the May decision that Microsoft knowingly infringed on Toronto-based i4i's patents. Microsoft has 60 days to comply with the injunction, which covers Microsoft Word software that lets users create custom XML documents; both the current 2003 and 2007 versions do. Microsoft has filed an emergency motion to block the order, and legal appeals or technical workarounds make an actual halt of sales unlikely. In a statement, spokesperson Kevin Kutz said, "We believe the evidence clearly demonstrated that we do not infringe and that the i4i patent is invalid."

SIX QUICK TIPS

Troubleshooting Backup Problems

Turn Negatives Into Positives By Improving The Troubleshooting Process

by Bruce Gain

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SUPPOSE YOUR ENTERPRISE'S data is backed up using a RAID 6 network-attached storage system, and tape is used for long-term backups. The tape is regularly transferred offsite by truck to a locked-down storage facility. As an extra measure of security, a second copy of all data that needs to be backed up is uploaded online and transferred to another remote storage facility. You have also worked with a third-party consultant and your legal department, which have confirmed that your storage policy meets Sarbox, HIPAA, and other standards requirements.

So now that your enterprise's storage and backup needs are accounted for, what can go wrong? A lot, as most admins can attest. On a daily basis, server bottlenecks can occur, a higher-than-normal percentage of disks might crash, or a number of potential mishaps can happen on any given day. This is where troubleshooting comes into play, and instead of just diagnosing and fixing problems as they occur, it is possible to use troubleshooting as a learning process.

Nancy Hurley, chief executive of Bocada (www.bocada.com), believes that taking lessons from troubleshooting and using them to improve your backup processes is just as important as solving potential problems. "Most experienced administrators understand that a backup success only tells part of the story," she says.

Here is a series of tips to not only help you put out fires, but to help you use troubleshooting to improve the overall security and reliability of your enterprise's backups.

Disaster Recovery Fire Drills

Perhaps the most critical role of successful backups is enabling you to recoup your data and applications quickly, such as when a disaster strikes. After a system failure or another snafu, you need to access the backed-up data right away, and the last thing you want to do is to troubleshoot problems. To avoid this scenario, begin troubleshooting potential data recovery problems in test mode before a real data-retrieval emergency occurs.

Hurley offers the example of an eager backup administrator who reviews and remediates all his environment's backups to ensure 99% success rates.

"When tasked with restoring the CEO's email from a month ago, he is confident that his hard work of resolving missed and failed backups on a daily basis will ensure a quick recovery," Hurley says. "Much to his dismay, he discovers that the mail server he hopes to restore had been mistakenly assigned to a legacy data retention policy that only stores one week's worth of backup data."

Managing and troubleshooting a backup environment thus involves a lot more than just monitoring job success and failure rates, Hurley says. "As in the above example, monitoring success and failures can help ensure recoverability, to a point," Hurley says. "There are many other aspects of the backup operation that must be monitored and tested to ensure all data is recoverable."

A Bottom-Up Strategy

It may not be the storage system but the network itself that is the source of your backup issues. Thus, start by taking a "bottom-up" approach and look first at the network to see if the network infrastructure is causing the problem, says Stephen Brown, product marketing manager at Network Instruments (www.networkinstruments.com). "For example, problems could be generated by propagation delay caused by a router, a security appliance not letting connections through, or outside applications hogging bandwidth and delaying backups," Brown says.

There are many things that could be causing bottlenecks. "It could be the network or other applications, which you could quickly pinpoint using a network analyzer," Brown says. "Using a network analyzer or retrospective network analysis device, you would begin by isolating and filtering traffic around the backup device. Looking at performance statistics or response times between the backup server and client would allow you to identify on which side communication errors or delays occurred. [This process] would allow you to isolate the exact point of failure."

Keep An Eye On Bandwidth

As admins know all too well, users do all kinds of things that are bad for the network. So when it comes to backing up data, troubleshooting should involve monitoring what

BONUS TIPS

■ **Keep systems up-to-date.** Something as elemental as drivers and software updates can be the root cause of a number of backup issues, ranging from system crashes to data uploads that regularly screech to a halt. "Check if the drivers and firmware have the latest version installed and, if not, check the release notes and install them," says Bjoern Gierisch, a storage presales consultant for HP (www.hp.com).

■ **Follow the procedure.** Does your troubleshooting process involve closely following a written plan that is routinely updated? If not, doing so can serve as a more comprehensive way to detect what the problem is when backups go wrong. "Have recovery procedures written and test them monthly," says Michael Petrino, vice president of PTS Data Center Solutions (www.ptsdcs.com).

SIX QUICK TIPS

Bring Networks Together After A Merger

Assessment, Planning & A Healthy Dose Of Cooperation Are Key

by Sixto Ortiz Jr.

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WHEN A MERGER OR buyout occurs between two or more companies, various aspects of the merged enterprises must be blended together seamlessly so the new company, it is hoped, is able to conduct business even better than the sum of its parts.

In a merger, critical aspects of a business, such as culture, processes, systems, and networks, must somehow be coaxed to work together in perfect harmony. The merging of two networks can prove to be an especially daunting challenge for network administrators who must quickly combine disparate systems and ensure that they work well together from day one. Read on for some quick tips that will help ensure success when merging two networks in a short timeframe.

Take Stock

Knowing what applications are running on each network and how much of the traffic is business-related vs. recreational is important for performance and security as well as bandwidth provisioning, says Joel Trammell, CEO at NetQoS (www.netqos.com). Trammell recommends that administrators look for network performance-monitoring tools that use NetFlow technology (also known as IPFIX) so they can identify the applications traversing the network and the bandwidth they consume.

Bill Horne, manager of the security solutions group at William Warren Consulting, says administrators should perform traffic analysis in order to determine the type and volume of traffic in each network prior to merging them. This is done in order to determine what policy differences may need to be reconciled before the merger occurs; for example, says Horne, some companies allow email attachments, while others don't. Administrators will need to seek guidance from management about a post-merger policy and then take steps to implement the policy and size the new network appropriately.

Also, says NetQoS' Trammell, understanding the infrastructure is critical to mitigating risk, delivering high service levels, and avoiding unnecessary and costly duplication of resources when combining two networks. Tools such as network traffic analysis, application response time monitoring, and device performance monitoring are all critical in this situation, he adds.

Consider The Toolkit

Before merging IT departments, it is important to assess the culture and network management tools used by each department, says Stephen Brown, product marketing manager at Network Instruments (www.networkinstruments.com). The reason, says Brown, is companies will most likely have different toolsets provided by different vendors. So, when consolidating network management tools, decisions need to be based on more than just cost savings; for example, admins should consider the culture of each company's IT staff and/or network team.

Brown says administrators should consider whether the organizations are Linux or Windows shops and whether network engineers are more comfortable with freeware or with higher-end purchased solutions. It is also important to consider the savvy of network engineers and the needs they are meeting when they use their tools of choice. Brown adds that administrators should also consider consolidating on a management platform rather than maintaining and paying for multiple point solutions.

The failure to consider these questions, warns Brown, can result in reluctant network staff forced to use tools that don't function properly, can't be effectively used by the IT and network administration staff, and eventually lay idle from lack of use, leading to decreased network performance and ultimately, business productivity.

Service Provisioning

According to NetQoS' Trammell, a key task when merging two networks is determining which applications and hosts are consuming bandwidth across the network. This determination, he adds, will enable the combined organization to make decisions about bandwidth investments.

"In addition, the ability to set QoS policies for which types of traffic get priority across the combined network is imperative, especially as organizations use more VoIP and video streaming," says Trammell. This task requires the political will and ability to agree on priorities between the different lines of business using shared infrastructure, he says. In other words, network admins will need to be negotiators and get competing parties who must now work under one organization to make decisions regarding the prioritization of applications and bandwidth. This may not be an easy task, because everyone will believe that their applications are essential and must receive the highest priority.

The key here, adds Trammell, is to ensure that priorities are agreed upon prior to the merger and that established policies work well moving forward.

BONUS TIPS

■ **Don't wait to merge.** According to Bill Horne, manager of the security solutions group at William Warren Consulting, employees are willing to ensure changes and learn new methods during the upheaval accompanying a merger. Administrators should take advantage of this mindset to implement change.

■ **Security is paramount.** Horne says administrators should establish and enforce a uniform security policy and publicize it well. This should be done quickly, so administrators face less resistance from users.

the users are doing and determining whether they are the cause of bandwidth bottlenecks that prevent data from being uploaded to disk arrays and online to offsite locations.

"[There is] an important reason to monitor bandwidth use on a regular basis: If the backup problem is being caused by delay, network monitoring will point out the application or network device responsible for the delay," Brown says. "For example, if someone is running P2P file-sharing on the network overnight to download movies, this could easily hog enough bandwidth to create application delay."

Unnecessarily backing up programs and files can also be a source of bottlenecks; for example, you should avoid backing up installed programs. "[Backing up installed programs] can fill up volumes unnecessarily," says Michael Petrino, vice president of PTS Data Center Solutions (www.ptsdcs.com). "Also, teach the user environment to delete unneeded data."

Look At Policy

In a big-picture sense, fine-tuning policy can go a long way toward solving existing and potential backup problems. An ongoing policy review is thus a "critical piece of a data protection service management process," Hurley says. "Organizations need to ensure that their policies are effectively supporting the business goals of the company as it relates to recoverability, compliance, SLA adherence, and capacity management. Initially, administrative teams should evaluate the policies in place to determine their impact on operations."

A solid policy analyst, for example, might reveal that too many jobs are started at once, causing bottlenecks, Hurley says. Also, retention rates might be incorrectly set and therefore recovery point objectives cannot be met or some users' data backups are duplicated, which wastes resources.

Best Tip:

Know Your Data Paths

It is critical to know exactly where all data resides and where it is transferred to and stored when backups run into problems. "Know what paths your data takes from creation to deletion," says Tim J. Arland, principal consultant at Forsythe (www.forsythe.com). It is necessary to analyze server, array, and switch connections; know where the backup servers are that manage application data sets and how data flows from clients to servers; and know which tape, disk, or archive targets are attached to backup servers or directly to application servers, Arland says.

Most Practical Tip:

Plan For Problems

Even without taking Murphy's Law into account, backup solutions just do not run at 100% efficiency 100% of the time. So instead of fretting over issues when they occur, troubleshooting should be factored in as part of an overall storage plan, says Bjoern Gierisch, a storage presales consultant for HP (www.hp.com). "Many problems can be avoided with good project management processes [that also involve troubleshooting] and allowing for time in the schedule to accommodate those phases," Gierisch says.

Personal Considerations

At first glance, the merging of two disparate networks may seem like a rather impersonal exercise; however, it is important that administrators remember that it is people who will use the network every day and who will complain if they perceive their needs are unmet and ignored.

William Warren Consulting's Horne says administrators must not assume that everyone has the same set of skills when they enter into a merger or buyout situation. For example, the buying company may inherit a network where the email is based on Lotus Notes or there is a large population of users that use Word Perfect, says Horne.

If that's the case, he adds, administrators will need to educate management on the retraining, relicensing, and conversion costs that will be required to unify mail systems or other different applications. That may be no easy task, especially if the conversion of vast amounts of data to a new format is required for a successful transition.

Also, says NetQoS' Trammell, facilitating collaboration across IT organizations is critical to maintaining high performance levels. Questions to consider include the processes that need to be implemented, how to communicate changes across different IT groups, and the methods that will be used to measure the impact of changes on appli-cation performance. In addition, says Trammell, performance management tools with views that can be shared among different groups are essential to success.

Time-Saving Tip:

Leverage An Extranet

Prior to consummating a merger or acquisition, key company executives and personnel may need to share information even as their respective companies remain competitors. According to Kathy Lynch, senior product manager at Virtela Communications (www.virtela.com), a collaborative extranet managed by a third party can allow key players to access and share documents securely, safely, and in accordance with each company's security policies.

Smart Tip:

Look At Legal Considerations When Merging

Administrators must keep in mind that many software licenses include "sudden death" clauses that prohibit transfers between corporations, says Bill Horne, manager of the security solutions group at William Warren Consulting. He recommends that administrators consult their legal teams if the licenses that are in effect at a network that is to be acquired have significant value.

Additionally, Stephen Brown, product marketing manager at Network Instruments (www.networkinstruments.com), says plans for merging networks can be impacted by privacy and corporate laws that affect various business types (such as insurance, health care, or financials). Administrators should keep in mind that the extent and timeframe that a company is allowed to merge networks may be determined more by regulations and legal counsel than technical common sense.

Barracuda Backup Service Adds Deduplication

Users Benefit From Reduced Storage Requirements, Condensed Backup Windows

by Tessa Breneman

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Barracuda Networks' Backup Service now includes data deduplication, ensuring customers will benefit from additional storage savings. The Barracuda Backup Service is an integrated local and offsite data backup and disaster recovery solution that combines an onsite appliance with a monthly subscription that replicates data to two offsite locations. The combination provides the best of both worlds—onsite backups for the fastest restore times and secure, offsite storage for disaster recovery.

Barracuda Backup Service employs block-level deduplication inline, reducing backup storage requirements. According to Barracuda, the typical customer's backup storage requirements will be reduced between 20 and 50 times over what is needed for traditional backup or snapshot technologies. That means users can condense backup windows and bandwidth requirements. New and modified data is targeted through an onsite appliance and offsite cloud-based backup and storage, using data deduplication to diminish the size of data added to the archive.

Barracuda Backup Server creates a local copy of data and efficiently transfers the data offsite without any additional burden on production servers. Offsite storage is monitored and managed by Barracuda Central as part of the Barracuda Backup Subscription, and tech support and emergency restores are included, as well.

The Barracuda Backup Service Web control panel makes it easy to manage and back up data to multiple units at one or more locations. It also provides control of settings, reports, restores, statistics, and account information to manage Barracuda Backup Servers and Barracuda Backup Subscription plans. In addition, customers receive automated alert notifications via the Web control panel.

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Integrates local and secure offsite backup for disaster recovery

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(888) 268-4772

www.barracuda.com/backup

Simple & Quick Backup & Recovery

CMS Products BounceBack Ultimate

by Seth Colaner

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Every data center employee knows the necessity of backup and recovery solutions. CMS Products' BounceBack Ultimate is designed to be a "digital spare tire" for PCs, allowing users to back up and restore the entire contents of a PC, including applications, data, personal settings, operating system, partitioning, and formatting.

Features include Instant PC Recovery, which lets users start up a PC from an external USB hard drive in case the operating system or hardware malfunctions, and instant One-Button Recovery, which is a simple and direct way of restoring a PC hard drive without the need for reinstalling anything. The QuickRestore function also lets users quickly restore specific files and folders.

Other features include CDP (Continuous Data Protection), a function of BounceBack Ultimate that continuously keeps new or modified files up-to-date; the ability to let Bounce-Back Ultimate run its processes in the background so users can continue to work while the program takes care of business; and easy-to-configure AES 256-bit en-cryption to secure your data from prying eyes.

BounceBack Ultimate also lets users back up to multiple media, such as an external hard drive or network drive, simultaneously so users can have multiple concurrent backups. With synchronization capabilities enabled, users can save a backup of their projects on a backup drive and use the drive on other computers. When the drive is again connected to the original computer, BounceBack Ultimate automatically syncs the changes, ensuring you're always working with the most up-to-date files. Users can also schedule backups and create backup sets.

CMS Products
BounceBack Ultimate

Full download: $89
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Lets users back up and restore the entire contents of a PC.

(800) 327-5773

www.cmsproducts.com

HOW TO

Evaluate Your Server Options

Blades Or Traditional: Which Is Best For Your Enterprise?

by Robyn Weisman

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CHANGE ISN'T EASY FOR MOST PEOPLE, and IT and data center managers are rarely exceptions to this rule. New technologies improve processes but add complexities, while energy consumption increasingly becomes a concern. The unending proliferation in enterprise data is about the only constant, if that sort of change can be considered as such.

Combine these changes with general server wear and tear, and eventually, you are going to find yourself needing to update your server configuration or, in some cases, replace it entirely. But with what exactly? Blade servers offer many advantages over traditional rackmount servers, but their power and cooling requirements may be too much for some SME server rooms. In some cases, a combination of the two might work, but how do you figure out the balance? And where does virtualization fit in the equation?

Here are some suggestions to get you started on this undertaking.

Key Points

- Determine the efficiencies of your current server configuration and plan what sort of efficiencies you want for any new or replacement servers.
- Both blades and traditional server boxes have their advantages, so you may want a mixture of both, depending on your needs.
- The availability and importance of your applications and data will impact what servers you ultimately choose.

How Efficient Is Your Current Server Setup?

There is no such thing as the "typical" SME data center. Some are running just a few servers in a closet, while others have server rooms that take up two floors of a building. But the size of your server room doesn't necessarily dictate your configuration, although most IT managers are not going to complain about more space in which to work.

To evaluate the types of servers you need, make a detailed assessment of your server needs and compare them to your current server usage, says Michael Nixon, director of product marketing for enterprise servers for NEC Corporation of America (www.necam.com).

"The definition of an underutilized server varies from IT department to IT department; however, most IT managers would tend to agree that low double-digit percentages or less are not desired," Nixon says. "Allowing for headroom for sudden performance demand peaks or future demand growth, IT managers usually desire their server utilization in the range of 65 to 75% of capacity.

But if server utilization is running low, say 30% or less, and it is not possible to stack additional applications to run concurrently for whatever reason, then follow-on server purchases can be smaller."

Blade Or Box—Or Both?

At first glance, blade servers seem ideal for smaller spaces because the units themselves take up very little space. But the power-density blades provided can overwhelm the smaller spaces because of the corresponding power and cooling requirements many computer rooms cannot meet, says Mike Barrett, a technical architect at business and technology consultancy Systems Alliance (www.systemsalliance.com).

"There are usually limitations [on] the size or expandability of a blade server, and most midsize companies don't require the gains in density that blades allow," Barrett says.

And blades, unlike traditional servers, don't come with hard drives. "Blades need network storage and access to it," says Roger Smith, founder of business solutions provider Artegenix (www.artegenix.com). With an infrastructure in place to support them, however, blade servers make more sense. According to Smith, a new blade is slightly less expensive than a new box and can ease pressure for more expensive server room space, as well.

A mixture of blades and boxes can be a sensible alternative, as long as your power and cooling infrastructure can accommodate the mix, Barrett says. "Different applications require different servers. A backup server may require multiple I/O interfaces that only a standard server can provide, whereas a Web or application server doesn't and therefore would be a great fit for blade servers," he says.

How Important Is Your Data?

Ultimately, the types of applications and data you host on your servers will determine the types you end up buying. For example, mission-critical solutions that handle such information as online financial transactions, public safety applications, and customer-facing Web servers that are not built on clustered platforms and have a high cost of downtime should only be run on servers that provide 99.999% continuous availability, says NEC's Nixon.

"A common type of continuously available servers that can meet this requirement are fault-tolerant servers that are fully redundant lockstep operating servers to ensure continuous operation even in the event of a hardware failure on the primary module," Nixon says.

Meanwhile, software licensing may affect the way you decide on servers. "Is the software licensed per server, per CPU, or per CPU core?" Nixon says. "From a perspective of the lowest possible software license cost, if the software license is priced per server, you'll want more CPUs per server. If software licenses are priced per CPU, you'll want more cores per CPU." P

HOW TO

Bring A New Data Center Online

Migrate Applications To A New Home

by Drew Robb

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MOVING DATA CENTER OPERATIONS is a delicate matter. There are hundreds of ways it can go wrong. That's why many companies are reluctant to move the company's crown jewels. But sometimes a migration is necessary, due to mergers, consolidation projects, corporate cost-cutting, expansion, power availability, and even real-estate market fluctuations.

In such cases, there are a host of do's and don'ts to consider, such as the amount of downtime available for each application, what hardware to keep and what to dispense of, overall timelines, and much, much more.

"There are numerous things that can go wrong, such as equipment damage, undocumented configurations or changes, miscalculating the downtime, and lack of coordination between infrastructure and applications teams," says Donald Klenner Sr., vice president of IT Infrastructure Services for Fujitsu America (www.fujitsu.com/us). "Discovery, planning, and documentation are the keys to a successful project."

TOP TIPS

- Choose the type of migration that works best for your enterprise: relocating or rebuilding infrastructure or physical-to-physical or virtual-to-virtual methods. Each has its pros and cons, so take those into account, as well.
- Test everything before and after the migration is complete, especially if you are working with a third party. Sometimes things that were working before the move will no longer work after.
- If necessary, have the appropriate engineers standing by to help in situations such as a power outage or a broken elevator.
- Be sure to create and implement a DR plan. By doing so, you have the option of failing over to a different site. Should you already have a DR plan, this is a good time to test or validate it.
- The application owner should be in charge of a migration and set the timeline to make sure it all flows properly. However, planning should be done as a team and include networking, infrastructure, and facilities.

Five Possible Ways To Move An Application

There are multiple ways to move systems and functions from the old data center to the new one. At the most basic level, you can literally forklift the machines onto the loading dock and ship them. But as well as being time-consuming, there is the potential for damage en route.

Physical-to-physical is another possibility. In this case, you set up an identical server at the new site, back up the data, and then restore it onto the new machine. The biggest challenge here is drivers not matching.

Virtual-to-virtual is more efficient: With a virtual environment operating in both the old and new data centers, it is a relatively simple matter to relay a virtual machine plus its applications to its new home.

"Virtual-to-virtual is the easiest and has the least risk," says Keith Gislason, an IT strategic planner at Emerson (www.emerson.com). "Using vMotion or storage replication, it is almost automatic."

Another possibility is rebuilding, which is required when moving to a completely different or more modern platform. It entails building a brand-new data center infrastructure from scratch, moving the applications, and then coping with whatever bugs crop up on an individual basis. This approach requires the most careful planning.

"Rebuilding problems include configuration errors, lack of driver support for older apps, or lack of documentation," says Gislason. "There can also be typos made, such as a wrong server name or IP address."

If the budget allows it, Fujitsu's Klenner suggests setting up an extended VLAN network and configuring the new data center as part of the same network as the existing data center.

"This is a little more costly but allows the migration of systems in a more gradual fashion with minimal changes," says Klenner.

Plan Carefully

Planning is crucial, whichever method you use. This includes documenting which apps to take down and in what order, application flows, and timelines and sequences. Effective planning involves the whole team—networking, infrastructure, and facilities—with the application as king.

"Migrations should be planned and owned at the application level, but you have to also involve the whole team," says Gislason. "It is the app owner's responsibility to make sure it all flows properly and set the timeline."

Therefore, don't underestimate the complexity and time needed to plan and execute a move. It requires lots of coordination from many people—and some may have different ideas about priorities or methodologies.

"What many believe to involve two men and a truck is actually a highly choreographed logistics event that is the culmination of business analysis and detailed planning," says Fred Latala, director of data center services at Forsythe Technology (www.forsythe.com). "Whether physically moving equipment or electronically

TOP TIPS

- **Take advantage of ROI evaluation tools to assess potential server architectures.** According to Mike Barrett, a technical architect at Systems Alliance (www.systemsalliance.com), most vendors offer ROI evaluation tools to show different scenarios, such as consolidating physical servers and adding virtual servers or rip and replace.

  "IT management should use this data as a starting point, making sure you take into account the unique way your company runs its business," Barrett says. "For example, businesses leveraging colocation sites may have strict power density restrictions that will not allow them to take full advantage of the density afforded by blade architecture."

- **Select a virtualization technology.** Virtualization technology is common in more and more SME data centers, and selecting a virtualization technology is a required first step, says Roger Smith of Artegenix (www.artegenix.com). "Aside from greatly improved hardware utilization, you'll gain testing facilities, the ability to react quickly to changing workloads, and failover capability," Smith says. "The hidden costs are the need to add management of the images and a few percentage points of performance."

  Barrett points out that blade servers are often the better choice in virtualization scenarios because they can make provisioning new servers a quick process. "Some virtualization vendors preload their hypervisor software on the blades, making provisioning even easier," Barrett says.

- **Don't forget about power supply functionality and efficiencies.** Fault tolerance is an important aspect when choosing a new server. "The consequence of assuming a device is fault-tolerant just because it has two power cords may be an untimely disruption to high-availability processing," says W. Pitt Turner IV P.E., president at Uptime Institute Professional Services (up timeinstitute.org).

  In addition, competing products often differ in energy efficiencies, differences that can mean significant reductions in energy use and cost. "Increased costs for the better efficiency [in servers] are usually more than offset by the reduced energy costs," Turner says.

- **Blades can save you money if you're expanding your data center.** "If expansion is a possibility, the extra costs associated with the more robust housing [used in blade servers] quickly amortize as more blades are added," says Bob Gezelter, an independent software consultant (www.rlgsc.com). "In addition, since many blades are interchangeable, it becomes easier to ensure capacity by using assets normally assigned to test and [for] development as reserve production capacity."

  Gezelter points out that using blades presumes your mass storage will be on a SAN and accessible to all blades as needed.

"Migrations should be planned and owned at the application level, but you have to also involve the whole team."

- Emerson's Keith Gislason

transferring applications and data, it is critical to understand the business context of the assets to minimize impact to your enterprise and clients."

He also recommends being prepared for everything. That means having mechanical, building, and electrical contractors on standby during the migration to eliminate any unexpected delays.

"If an elevator fails or a new power connection needs to be run, you need quick response to stay on schedule and minimize wait charges from outside technical and transportation resources," says Latala.

Another consideration is the rate at which everything is loaded.

"You can cause overload if you add computing equipment and applications too quickly and do not expand the onsite power generation fast enough," says Don Blackman, vice president at ASCO Power Technologies (www.asco.com). "If the utility goes down, you don't have enough juice to keep the facility up and running."

Timelines, therefore, should take this factor into account. Having the backup generators arrive late in the migration could result in severe downtime before the data center even gets fully online.

Testing, Testing, Testing

Whether relocating physical or virtual servers, testing is of the utmost importance. Test anything and everything that has the slightest chance of being connected incorrectly. Test external services, network connections, and servers before and after the move. This becomes even more important when a third party is involved.

"Test the electrical and network connections in advance to ensure they are live and operating correctly," says Latala.

But regardless of testing, it is vital to implement a DR (disaster recovery) plan during the move. This can be a lifesaver. In the face of unforeseen situations, you always have the option of failing over to the DR site.

"Utilize DR as part of the move/migration toolset," says Klenner. "A migration is a great way to test/validate any current disaster recovery plan, if it exists, or help to create and evaluate a new one. DR should also help to minimize outages during the migration."

Key Points

- Relocating a data center requires careful planning and input from everyone involved.
- You can never do too much testing when migrating.
- Have contingency plans made ahead of time, accounting for multiple things going wrong, and make sure you set a timeline for the move.

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News

Alibaba Launches U.S. Ad Campaign

Chinese e-commerce Web site Alibaba.com launched its first large advertising campaign in the United States. The campaign is meant to introduce Alibaba's English language site to U.S. entrepreneurs and businesses. Alibaba.com, which is owned in part by Yahoo! and Cisco, acts as a platform for businesses to buy and sell products as well as supplies and raw materials. So far, only 1.3 million of Alibaba.com's 8.6 million foreign users were registered in the United States, the company says. The campaign's ads will run on Web sites such as CNN Money, and television spots will appear on CNBC and ABC.

Concern Rises Over Data Leaks On Facebook, Twitter

Corporate executives are worried about the potential security leak of business data through the misuse of Facebook and Twitter. According to a data loss survey by Proofpoint, domestic enterprises are vulnerable to a rising number of incidents related to exposure of private information. Other avenues of concern include email, blog posts, multimedia sites, and text messages. The study shows that the use of Twitter has sparked concern about exposing corporate data even in less than 140 characters. About 13% of U.S. companies dealt with mobile or Web-based SMS data leak investigations in the past year.

AT&T Study Reflects IT Concerns

IT executives are ready for an economic recovery in 2010, but there are still several problems the industry will need to overcome. AT&T's "Road To Growth" survey found that pressure on IT executives to increase returns on investments has increased, which has also affected budgets, strategies, and priorities. For the survey, more than six dozen one-on-one interviews were done with IT executives who work for a U.S. firm or a U.S. subsidiary of a foreign company. More than half say they are now expected to produce favorable results in half the time. Cutting costs and boosting productivity were named the top priorities, along with better collaboration between customers and partners.

Cisco Revenues, Income Down

Networking giant Cisco reported declines in its fiscal year and fourth-quarter earnings. For the latter, net sales were down 17.6% year-over-year to $8.5 billion, with net income falling 46.3% to $1.1 billion ($1.8 billion non-GAAP). Earnings per share for the quarter plunged 42.4% to 19 cents (31 cents non-GAAP). For Cisco's fiscal year, net sales of $36.1 billion held ground with a relatively lean 8.7% drop from 2008. Net income was down 23.8% from the previous fiscal year to $6.1 billion ($8 billion non-GAAP), and earnings per share were down 19.8% to $1.05 ($1.35 non-GAAP).

Gartner: IT May Be Regulated By 2015

It's increasingly inevitable that the IT industry will be facing more stringent regulations by 2015, according to a report by research firm Gartner. Because of the continued growth of available personal data via social networking sites and increased cyber attacks, Gartner says the government will demand more regulation of the IT products and services industry. The study also indicates that preparedness for these impending changes among vendors and IT organizations is unacceptably low.

Quantifying The Cost Of IT Services

Accurately & Transparently Reporting IT Costs

by Kurt Marko

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THE DIGITIZED ONLINE information economy has moved IT from the organizational backwoods to the corporate boardroom, as a strategic player involved in most new business endeavors. "As IT has become more pervasive in most organizations, it has migrated from a supporting role to an enabling role for products and services," says Craig Symons, vice president and principal analyst at Forrester Research.

Key Points

- As IT has become a strategic part of the business, it is increasingly important to identify, quantify, and report IT costs to business managers with the authority to incur the cost and responsibility for controlling it.
- The most accurate accounting methodology, as described by the ITIL (IT Infrastructure Library), requires developing an IT service catalog and mapping various cost drivers, such as hardware and personnel, to specific services.
- Greater cost reporting rigor and transparency can be used with a chargeback billing model that identifies major IT services, associates some usage dependent measures and rates to each, and bills individual business units based on monthly consumption of the service.

Although IT has matured into a critical business unit, it often doesn't act that way regarding financial discipline. As Karen Berman and Joe Knight note in their book, "Financial Intelligence for IT Professionals" (reviewed in the May 22 issue of *Processor*), corporate finance departments and IT have historically had a rocky relationship. "IT departments have a reputation for spending lots of money (and always asking for more), yet they often have difficulty demonstrating their impact on the bottom line," note Berman and Knight in the book. According to Symons, "IT costs represent a growing and sometimes significant part of products' and services' total cost—yet many firms lack the IT financial transparency to understand the implications." This situation can distort executive decisions and even a firm's financial reports.

In light of IT's elevated importance, Berman and Knight stress that managers need to start speaking the language of business, namely numbers—and they don't mean bits, bytes, and megahertz. Yet it's impossible for IT to provide meaningful financial figures and so-called transparency, without being able to link specific costs to IT services, and in turn, map service usage to actual business activities.

Develop IT Cost Transparency

Like all other forms of financial reporting, the benefit of IT cost transparency is that it facilitates better business decisions by providing accurate information on the various components of IT's budget, the services provided, the users of services, and their total consumption. The ability to map IT charges to business usage also allows IT managers to more effectively and credibly communicate IT's value to the overall business and to proactively manage service demand and resource consumption. While typically used as a charging, cost allocation, or control mechanism, Terence Quinlan, director of the IT Financial Management Association, says accurate IT cost reporting is also useful when planning and evaluating IT investments.

The operative phrase in this litany of virtues is 'IT service.' To enable cost transparency, IT must move beyond being simply an infrastructure operator or technician dispatcher but must develop what is known in ITIL (IT Infrastructure Library)-speak as a service catalog. "You need to think of the services you provide instead of the technology assets you operate," says Symons. This requires developing a list of major IT services, for example, email, PC support, and ERP; identifying the assets and personnel used for each; and allocating their costs to each service.

The practice of mapping assets and resources to services and apportioning costs according to some measure of service consumption is known as chargeback. "IT chargeback remains the best tool for influencing end-user behavior, but only if it delivers enough information about the actual cost of IT services that are consumed and enables end-user management to link its IT consumption to value," says Symons.

IT Cost Drivers

Once a service catalog is in place, the ITIL provides a convenient model for understanding how to categorize and allocate costs. As per Cost Accounting 101, there are two major cost groupings: capital and operational. The former includes the obvious items such as major pieces of hardware, but also application software with a significant life span, such as ERP or CRM systems. Operational costs include everything from personnel and facilities, such as rent and utilities, to telecom charges and external services, such as SaaS (Software as a Service) and consultants.

Having identified the major cost drivers, ITIL's methodology breaks them down further into three classes: direct, indirect, or overhead. The first can be directly tied to a specific service, while the other two must be allocated to users in some equitable manner.

Cost Metrics & Standard Reports

When analyzing IT spending, a common measure is to examine the total budget as a percentage of company revenue, yet Quinlan finds this metric largely meaningless because it varies widely across industries. He says that with a chargeback mechanism in place, allowing IT expenses to be tied to a company's products or services, a better metric is to analyze IT's share of the total product cost. For IT investments, Quinlan recommends using the standard ROI measures such as payback period, IRR (internal rate of return), or NPV (net present value). He also suggests doing a postmortem audit of each major IT project, say, the top five as a percentage of IT's budget.

When initiating a chargeback scheme, Quinlan advises focusing on the 10 or 20% of IT services that consume 80 to 90% of the typical budget. Each chargeable service should have some unit of measure with a causal linkage to cost (for instance, an email account or GB of storage), have rates tied to this usage measure, be a controllable activity, and require minimal data acquisition to get a reasonable assessment of usage. Although developing IT financial discipline does require upfront effort, Symons says the ongoing operational overhead of chargeback accounting is small, typically only 0.3 to 0.7%, of IT's total budget.

Laura DiDio, principal at research and consulting firm ITIC, also stresses the importance of quantifying the business value of various IT services, such as their ability to generate revenue; improve efficiency; or lower non-IT production, support, and operational costs. This value analysis can identify areas where IT may be over-spending or need additional investment. "You need to ask 'How much can you afford not to spend,'" she adds.

Accurate and transparent IT cost reporting, when coupled with a service catalog and chargeback model, can be a powerful tool in controlling IT costs, but Quinlan adds such reports can also improve IT's credibility within the business and assist managers in making better decisions. Symons agrees, adding, "Understanding your IT cost of goods sold can lead to a more agile and competitive organization." P

Recommendations To Improve IT Transparency

Being able to allocate IT costs to the appropriate activities requires the ability to link IT costs to IT services that, in turn, link to business services and business capabilities. This implies that IT must first transition from a technology management culture to a service management culture.

- **Define services and implement a service catalog.** The first step is to understand the services that IT is providing rather than the technology. You can then define these services and incorporate them into a service catalog.
- **Develop cost models for each service.** For each service in the catalog, develop a cost model that maps the technology, labor, and other costs required to support the service. Once the cost model has been developed, use it to set the service price. This is the cost that the business will be charged.
- **Define allocation methodologies.** Charging customers for IT services requires a method for allocating the costs. Common allocation methods include direct consumption, per transaction, or headcount. A document archival service might be consumption-based and linked to page counts, while an email service might be allocated based on headcount.
- **Integrate with financials.** The final step is to embed IT customer invoices into the enterprise financial accounting system, so that IT charges are accurately reflected in the business units' profit and loss statements arriving at complete IT financial transparency.

SOURCE: "DO YOU KNOW YOUR IT COST OF GOODS SOLD?"; FORRESTER RESEARCH REPORT BY CRAIG SYMONS; APRIL 28, 2009.

Cabling: Issues To Consider

What To Know When Buying & Implementing Cabling

by Elizabeth Millard

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Cabling is crucial to a data center, as improper implementation can lead to downtime. However, many data center managers don't put much time into cable planning and research, notes Peter Hail, Warehouse Cables (www.warehousecables.com) CEO.

"If you try to do cabling on the fly, it gets messy," he says. "I've seen cases where managers just buy a few cabling pieces at a time and hope for the best. That's not really a way to future-proof your network."

There are many issues to consider when choosing cables and implementing them in the data center. Here are a few top ones that should figure into any purchasing round.

Network Planning

"One of the most important things for cable buying is to buy not only for what you're running now but also for what you might be running in the future," says Tim Orr, general manager of cabling and infrastructure solutions provider Blue Wave Communications (www.bwcfla.com). "You have to find out where you want to go and how quickly you've upgraded in the past."

By looking at technology adoption rates, a data center manager can make better cable purchasing decisions. Orr believes that data centers should install the highest-grade cable that a budget will allow.

Copper Or Fiber

The data center standard is Ethernet, and there doesn't seem to be a trend away from that in the foreseeable future, notes JR Rodrigues, president of NetCablesPlus (www.netcablesplus.com). That means there are two basic types of cables to be used: copper Ethernet and fiber optic Ethernet.

Key Points

- Do network planning before buying cables, so cables will be appropriate for data center growth.
- Install the highest-grade cable that the budget will allow.
- Use color-coding, which will keep cables organized and help you quickly choose the right cable for the job.

Rodrigues says, "Based on the state of data center equipment today, copper Ethernet cabling is used to connect the data center equipment to the internal business or end-user side of things, while fiber optic cabling is used to network the infrastructure and to connect to the outside world."

Therefore, it's not a matter of choice between the cable types, but rather, data center managers should plan to see how they mix together.

Ethernet CATs

Copper cables for Ethernet applications come in CAT 5e and CAT 6 patch cables. There are newer CAT 6a/CAT 6e and CAT 7, but Rodrigues notes they're still works in progress, and many stores don't even carry them yet.

The biggest question currently tends to be whether to spend slightly more for CAT 6, as both CAT 5e and CAT 6 cables support 10/100 Ethernet networks. However, Rodrigues believes most enterprises will decide not to purchase a CAT 5e cable anymore, because the cost of CAT 6 cabling is just pennies more and comes with higher bandwidth capabilities.

CAT 6 also has improved protection against crosstalk and is considered more "forgiving" of any network configuration issues that otherwise might degrade performance with the CAT 5e cables, he says.

In terms of fiber optics, close attention should be paid to what type of cable the equipment manufacturer has specified for the optimum performance of the networking device. Managers should be aware of the type of fiber (50/15 and 62.5/125, for example) and whether the configuration is multi-mode or single-mode. Finally, consider the types of connectors. Rodrigues notes: "Occasionally, a manufacturer will specify a polishing type like APC or UPC, which involves how the connectors are attached to the fiber, so you may need to be aware of that issue, as well."

Factory Crimping

Rodrigues cautions against inexperienced users following the current "roll your own" phenomenon, in which managers or IT employees save a bit of money by buying bulk reels of cable and crimping their own RJ-45 plugs on them.

"What they don't realize is that it's very, very easy to make a less-than-perfect crimp, especially on CAT 6 cables, and still get a green light on the equipment, when in fact, the crimp is going to cause significant performance degradation," he says.

Trying to find one Ethernet cable that's causing a performance problem—or even recognizing that the issue is coming as a result of a bad cable—is one of the more frustrating and costly troubleshooting exercises in the data center, Rodrigues notes.

A factory-crimped cable is put on a sophisticated cable tester before it's packaged, and they're available in custom lengths, so he believes that it makes little sense to be risking performance for such a minor amount of savings.

"If you try to do cabling on the fly, it gets messy."

-Warehouse Cables' Peter Hail

Implementing Cables

Because copper Ethernet patch cables come in a wide variety of colors, cabling experts note that data center managers should take full advantage of a color-coding method to organize the cables.

"It's wise to color-code various network segments, because when all the cables come together, suddenly, they all look alike," says Hail.

Rodrigues adds that one military client of his uses the color of the cabling to reflect the security level of the network on which they're being used, and any data center can do the same. To keep the colors straight, a data center can even create associations based on stoplights. For example, a red cable can be at a high security level, while green and yellow reflect less secure networks.

Another customer of Rodrigues uses color codes for the length of the cable, he says. "That way, they always know that a blue cable is a 5-foot, a yellow cable is 7-foot, and so on. It saves time in picking the right cable for the job."

Know Your Building Codes

One important consideration when buying cables is which fire codes apply to the building, notes NetCablesPlus' (www.netcablesplus.com) JR Rodrigues. He says, "Many localities now require plenum-jacketed cabling whenever the cable is being run in ceilings or walls to prevent the toxic fumes associated with standard PVC-jacketed cables."

News

IT Shortcomings Cause Competitive Disadvantage For Small Businesses

About one in four small businesses receive a grade of D or F when it comes to their overall IT effectiveness, and an additional 37% have a middling grade of C, according to the ITEI (IT Effectiveness Index). About two-thirds of those surveyed say they believe that IT and Web commerce are important to their businesses, which means that a high number of small businesses are not operating up to their own desired standards in regard to IT.

These IT shortcomings can manifest themselves as lax security measures, inability to prepare for or deal with incidents, and IT unavailability and downtime, and they appear to be often caused by reductions in investment capital and a dearth of staff to manage pre-existing IT investments. The result is that small businesses are at a competitive disadvantage.

Online Benchmarking Tool

The ITEI is an online benchmarking tool designed to help small businesses give themselves a sort of self-audit to determine where their vulnerabilities lie so they can address any issues. However, after determining where one's faults lie, the task of mitigating any issues becomes paramount.

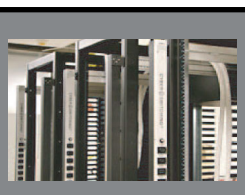
According to Carl Meadows, senior manager of product marketing with The Planet (one of the sponsors of the ITEI), "Your goal [as a small business] should be to implement best practices in IT, understanding that you have less resources, and that you have less staff and budget."

The partners behind the ITEI have some generalized solutions for any small business to consider, including focusing on the core aspects of your business, exploring outsourcing options, and taking advantage of free software.

They also suggest exploring hosted hardware, software, and services options in lieu of trying to build the infrastructure in-house through investment capital, noting that outsourcing doesn't necessarily mean that you'll be spending more money.

"Not all small businesses have learned that if it's not core to your business, you probably shouldn't be doing it yourself. And there are probably people out there that can do it for you and can do it better and cheaper than you can do it yourself," Meadows says.

by Seth Colaner



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News

LAN Sprawl Survey Shows Inadequacies

ConSentry Networks, along with research firms Loudhouse Research Group and Yankee Group, released a report on a survey performed by Loudhouse that shows LAN sprawl (or multidimensional growth) is a major issue for IT personnel in organizations. The survey consists of 200 interviews with IT decision makers in both large and midsized companies from the United States and the UK.

More than 90% of respondents strongly agree that there is a need to manage users with more than one profile or user ID in order to properly manage the cross-functional needs of the organization. Additionally, 93% of respondents say users are more likely to need access to several parts of the network at different times of the day and night for business reasons, which also poses network security challenges.

LAN Roadblocks

Michelle McLean, senior director of product marketing for ConSentry, cites ad-hoc groups, the proliferation of mobile devices, and dynamic users as some of the more challenging threats to LANs. McLean says this report exposes that the way LANs are working today does not dovetail well with dynamic environments, and context is the means of enabling control.

"It's not industry-specific, it's not geographically specific—these are universally challenging problems that are really putting businesses at risk," she says. "They are very much stuck between the economic drivers of using contractors and hosting outsiders and getting projects done more quickly. They all need to do it to be competitive. They all see that they are putting their business at risk, and they are all struggling with these problems."

According to the survey results, 66% say the abundance of devices and applications makes it harder to audit the networks, and 72% cite the need for improved control over security.

The survey also highlights the need to address LAN sprawl, as 55% of U.S. companies and 44% of UK companies expect more growth, but just 42% of organizations have adequate investment for IT to support the security goals.

McLean says organizations need help shaping policies that take into account different attributes and shape the right policy for which user can do what. This can help elevate the LAN to become an orchestrator.

"What does it mean for the LAN to be an orchestrator? Very simply put, it's enabling the right services to the right people at the right time," says McLean.

by Tessa Warner Breneman

Tips For Protecting The Roomless Data Center

Even Without Walls, Centralized Infrastructure Needs Protection

by Carmi Levy

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Although only IT shops with sufficient budget and maturity can justify or afford the raised-floor, controlled-access, environmentally controlled facility most associated with the term "data center," those companies stashing their servers and switches in broom closets and under the receptionist's desk may want to think twice. Data centers take on many forms, and ignoring the need to secure your equipment in some way can eventually become a costly mistake.

"In a technology-enabled business environment, sloppy or inadequate physical protection of the data environment is equivalent to leaving your office door unlocked at night," says Lynda Stadtmueller, senior research analyst on Frost & Sullivan's business and communications services research team. "Your company's most valuable intellectual property—from customer and supplier lists to financial data to product and manufacturing information—is stored and managed in electronic form. To fail to limit access to the machines that house your data is to risk loss or compromise of all that data."

Understand The Impact

Stadtmueller says companies weighing the risks of a wide open status quo must do so in business terms.

"The risks of sloppy physical security are as great as losing crucial business records, running afoul of regulations, and driving away customers and suppliers," she says. "The rewards of doing it right are that you can continue to run your business efficiently."

Mark Kadrich shares the sentiment. Kadrich, CEO of The Security Consortium (www.thesecurityconsortium.net) and author of "End Point Security," says physical security is an absolute cornerstone of business security.

"The option of 'anything goes' is a non-starter unless the servers contain useless data that have no real impact on your business," Kadrich says. "In an open configuration, the security issues are impossible to overcome. Any security professional will tell you that if he can get his hands on the system, then all secrets that the system holds are his."

Putting servers into a controlled environment where IT can control physical access to them is a critical first step to ensuring functionality and security, Kadrich says.

"You are thus able to control the configuration of these systems and to ensure that digital security controls, such as firewalls, antivirus, and intrusion detection software, are installed and functional," he says. "Furthermore, if the company has regulatory requirements—and most do these days—this approach is a must-have."

Sharing Power With The Coffee Maker

Some risks of installing servers and related network infrastructure in a non-secure environment are inadvertent. Carl Cottuli, vice president of product development and services for Wright Line (www.wrightline.com), says the outcome can be devastating.

"In an open configuration, the security issues are impossible to overcome. Any security professional will tell you that if he can get his hands on the system, then all secrets that the system holds are his."

-The Security Consortium's Mark Kadrich

"A piece of critical IT equipment in an open environment may lose power because someone plugged in the office Christmas lights onto the same outlet as the server," Cottuli says. "Or an uninformed employee turns up the heat in winter or adds a space heater that is in proximity to the IT equipment. This causes the IT equipment to overheat and permanently damages it, making recovery time much longer than using a separate plug for the space heater."

With the Uptime Institute reporting human error as the leading cause of data downtime, Cottuli says putting as much distance as possible between employees and equipment is an effective place to start. When a dedicated space just isn't possible, secure closets and racks, plugged into unique power and network connections, can keep critical equipment away from prying hands. More advanced units incorporate sound control and cooling into the chassis to limit the impact on surrounding employees.

Avoid Going It Alone

Frost & Sullivan's Stadtmueller says in many cases, organizations play fast and loose with centralized network infrastructure because they lack either the budget or the expertise, as the in-house IT expert is rarely also a security guru. In most cases, she recommends looking elsewhere for answers.

Key Points

- Even the smallest company with one server needs to invest something in keeping it safe from deliberate or inadvertent physical harm.
- Non-secure devices in an open environment can lead to significant fiscal loss and regulatory exposure.
- Human error is the leading cause of data loss. Assess its potential to damage your environment.

"The answer is not to compromise on security," she says. "Instead, the solution in this case is to outsource the infrastructure altogether to a third-party provider. While this is a trend that's been gaining popularity across all market segments, it's an option especially well-suited to SMBs."

She outlines the outsourcing value proposition as follows:

- **Lower cost.** Outsourcing something as small as a four-server data environment can cost 50% less than an onsite buildout because equipment and supporting infrastructure costs are leveraged across the service provider's client base.
- **Operating vs. capital budget.** It's often easier to get approval for and to manage monthly operating costs than to commit to a capital investment.
- **Scalability.** Shared environments can be expanded more flexibly and cost effectively as business-driven data requirements evolve.
- **Better facility.** Few SMEs could afford to build a facility to the Tier 3 or Tier 4 security, access, backup, and failover specifications typically found in shared data centers.

Frank Shannon, vice president of client services with UbiStor (www.ubistor.com), agrees the answer often lies in outsourced solutions, where virtualization is extending the cost benefits for SMEs. But he warns against selecting providers whose facilities fall below acceptable standards for technology, security, and business continuity.

"Trying to reduce costs further by transitioning important business systems to a lesser environment brings with it a whole set of new potential problems and risks nowhere near commensurate with the cost savings," Shannon says.

No Dedicated Data Center? Use These Tips

Although secure facilities are optimal for maintaining optimal equipment security and integrity, they're not always affordable or feasible. Consider the following tips if building a dedicated data center room isn't possible:

- **Get some distance.** As much as possible, physically separate servers and related equipment from employees. Avoid using common electrical and network outlets and train staff to steer clear of critical hardware.
- **Investigate secure racks.** Advanced, lockable designs with built-in cooling and sound control can keep equipment safe and cool even in an open environment.
- **Consider outsourcing the data center entirely.** If it isn't your organization's core competency, increasingly capable, cost-effective third-party alternatives are becoming more mainstream.

Converged Enhanced Ethernet

Reduce Costs, Power & Cooling Requirements & Management Complexity

by Kurt Marko

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Convergence is to networks what virtualization is to servers—not just an overhyped buzzword, but a design paradigm with associated cutting-edge technologies that enables more efficient, versatile, and easily maintained networks. Ethernet and TCP/IP have long been the network standard protocols and are gradually subsuming proprietary or dedicated networks for virtually all communications. A trend that gained visibility with voice (VoIP), spread to video (IP teleconferencing and IPTV) and now the data center, converged networks transporting both storage and LAN traffic are variously known as CEE (Converged Enhanced Ethernet), DCE (Data Center Ethernet), or DCB (Data Center Bridging, an IEEE standards group).

Just as VoIP reduced the complexity of provisioning voice communications by eliminating dedicated analog networks and their associated equipment, Dell'Oro Group (www.delloro.com) Director Alan Weckel says CEE, by replacing dedicated SAN fabrics, allows IT to reduce the number of networks, switches, and even administrative personnel by converging the LAN and SAN onto a single infrastructure. According to Omar Sultan, senior solution manager at Cisco, the goal of DCB standards is to enable a generic, multipurpose fabric incorporating the reliability and latency characteristics of older, special-purpose networks such as Fibre Channel and InfiniBand.

The use of multiple networks creates other problems, according to Burton Group Service Director Michael Disabato. "Supporting multiple data center networks (for example, Ethernet LANs vs. FC SANs) exacerbates heat generation and power consumption, limits airflow within racks, restricts growth within the data center, and complicates management," he says. "These are the driving forces for consolidating the data center network infrastructure around a single standard: Ethernet."

CEE & FCoE vs. iSCSI

The essence of CEE is the fusion of 10GbE data networking with technology allowing Fibre Channel to operate over Ethernet (FCoE). The technical work to define and specify such converged networks is happening on two tracks, according to Sultan: first, the migration of the FC storage protocol to work over an Ethernet physical network, and second, extensions to the underlying Ethernet specifications to replicate the reliability and CoS (Class of Service) features inherent in the FC transport layer.

To fully understand CEE, it's necessary to review some networking basics, notably the distinction between Ethernet, a physical, Layer 2 standard, and TCP/IP, the transport (Layer 4) and network (Layer 3) protocols that ride on top of it. While the ability to build SANs on top of existing Ethernets has been around since the major OSes offered iSCSI support more than five years ago, iSCSI operates at the TCP/IP layer, and while it does provide lossless transport, Ethernet itself does not. This means that "iSCSI suffers from the retransmissions and the effects of congestion that can occur from time to time on TCP/IP networks, thus limiting its scalability to extremely large, high-speed storage networks," according to Disabato.

In contrast, Fibre Channel, the dominant SAN protocol, was designed to provide lossless transport and flow control at the physical layer. "Ethernet provides neither of those functions, relying on higher layers, such as TCP, to provide them," says Disabato. The FCoE standard, a cornerstone of CEE, encapsulates FC frames within Ethernet (see graphic), thus allowing the same physical infrastructure to be used for both data and storage. Disabato adds that although theoretically iSCSI obviates the need for CEE, due to its reliance on TCP/IP and concomitant susceptibility to inconsistent performance on congested networks, it hasn't displaced FC in large enterprises and is largely confined to SMEs. He notes, "If you can get by with iSCSI, it's cheaper, but it doesn't have all the bells and whistles."

CEE & 10GbE

The DCB standards assume—nay, require—10GbE, but until recently, hardware costs have been a problem. However, 10GbE NIC costs have dropped sharply in the past 18 months. And although some see 10GbE NICs quickly migrating to server motherboards, Weckel believes it will require two more hardware cycles until a single-chip 10GbE solution is widely available in 2012. Even so, he says 10GbE is already less expensive per unit of bandwidth than GbE.

Once 10GbE networks are in place, Sultan sees the migration to a converged storage network occurring "from the edge in"; that is, by replacing the multiplicity of Ethernet and FC interfaces on most servers with a 10GbE NIC. In this evolutionary scenario, servers are connected to a multiprotocol switch that supports both FCoE and native FC, which enables transparent access to existing FC storage arrays. Sultan sees a complete end-to-end migration taking years; however, because much of the hardware and administrative costs are borne by servers clogged with multiple interfaces, the "edge in" approach accrues most of CEE's benefits up front.

Key Points

- CEE, aka IEEE's Data Center Bridging standards, aims to make 10GbE the universal backplane for data and storage networks, replacing native Fibre Channel and InfiniBand.
- 10GbE is a requirement for CEE, and although NIC and switch prices are rapidly decreasing and are well below those for optical FC, they're still nearly 10 times those for Gigabit Ethernet.
- SMEs without existing FC infrastructure or who have less demanding storage requirements can achieve many of CEE's benefits without waiting for FCoE to mature by using iSCSI instead.

Preparations For CEE

Because a converged network starts with 10GbE, a first step is an infrastructure design and equipment upgrade plan for both switches and servers. Cabling is a complicating factor in 10GbE installation, with several copper cable standards currently in use. Although 10GBASE-T, using CaT 6a or CaT 7 cable, would seem a logical migration, it's currently quite expensive and power-hungry. Disabato recommends an alternative layout using so-called SFP+ cables between servers and top-of-rack switches, reserving CaT 6a for longer runs between edge and aggregator switches.

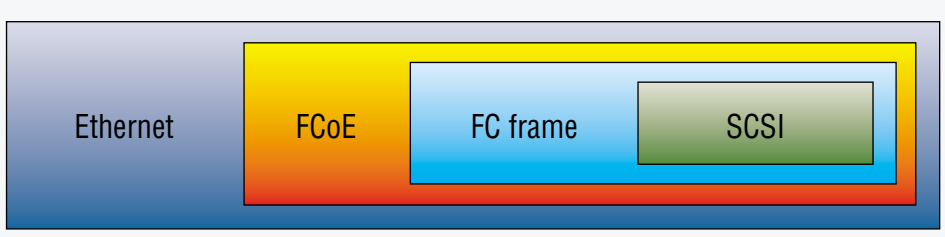
With the physical network in place, Sultan outlines a four-step CEE implementation process. Start small by adding a noncritical application server to a converged 10GbE network and using a multiprotocol switch to attach to an existing SAN, adding additional servers as you become comfortable with the technology. Later, when considering storage hardware upgrades, Sultan says to look for arrays and switches that have native FCoE support to enable an ultimate transition to an all-Ethernet environment.

A final consideration is organizational. A key benefit of CEE is reducing operational redundancy, so Disabato advises planning for combined storage, server, and network operations under a single service desk using standard ITIL service operations processes. He concludes, "Most enterprises fail to plan for the organizational changes that new technology often brings. Recognize the shift that CEE will cause and plan accordingly." P

The essence of CEE is the fusion of 10GbE data networking with technology allowing Fibre Channel to operate over Ethernet (FCoE).

Fibre Channel Over Ethernet

FCoE encapsulates FC frames within Ethernet frames and allows a single network infrastructure to be used for SANs and network access.



Source: "Converged Enhanced Ethernet: Weaving the Unified Fabric"; Burton Group In-Depth Research Overview by Michael Disabato; June 11, 2009.

News

Cloud Computing: Do Business Decision Makers Understand The Benefits?

About 28% of IT executives are planning a private cloud deployment within HPC (high-performance computing) before the end of this year in an attempt to manage workload demands and IT costs, according to a survey by Platform Computing. Cloud computing and its ability to offer a shared resource pool for computing, networking, and storage makes it ideal for the compute-intensive HPC application arena.

"The amount of interest in private cloud was higher than anticipated," says Randy Clark, chief marketing officer for Platform Computing. "Cloud computing is definitely a priority," he says.

The survey looked at how IT executives are responding to cloud computing and reported that most IT execs feel positively about the benefits it can offer. Of the respondents, 41% say that improving efficiency is their biggest motivation for deploying a private cloud. Other motivating factors include resource scalability (cited by 18% of survey respondents), followed by cutting costs (17%), experimenting with cloud computing (15%), and improving IT responsiveness (9%).

Understand The Benefits

Platform's survey shows that although IT executives understand the benefits of a private cloud, company business decision makers often don't. In fact, 76% of the survey's respondents say they do not feel business decision makers understand the benefits.

"Communication between business and IT can be challenging. Business executives are concerned about application performance and meeting service-level requirements," Clark says.

More than 35% of IT executives surveyed say they feel organizational culture is the greatest roadblock to deploying a private cloud. But Clark believes this will change. "The industry is emerging from its infancy, so we are optimistic that this will change," he says.

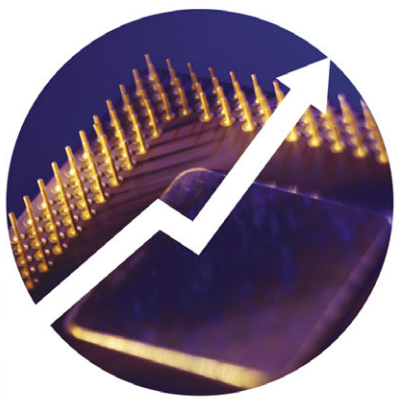
For IT execs to educate business decision makers about the benefits that cloud computing can offer, they need to show how cloud computing affects both IT responsiveness and costs, says Clark. For enterprises to fully benefit from private clouds, IT needs to become more of a "service partner" with the business. "It's about evolving to private cloud one project at a time, demonstrating value along the way. It's evolutionary."

by Kris Glaser

News

Microprocessor Shipments Improve

Worldwide shipments of PC microprocessors are trending upward, according to the latest numbers from market research firm IDC. Intel's overall PC processor shipments rose 12.5% and AMD's shipments rose 1.8% in the second quarter. IDC says that PC shipments are not responsible for the improvement in processor shipments, but rather inventory replenishment on the parts of Intel and hardware makers. Compared to the first quarter of this year, shipments increased by 10.1%, nearly erasing the 10.9% decline in shipments that occurred between the fourth quarter of 2008 and the first quarter of this year. For the current quarter, market revenue rose by 7.9%.



Intel, Micron Develop New NAND Memory

IM Flash Technologies, a memory joint venture between Intel and Micron, has advanced the state of the art in NAND technology for flash memory cards and USB flash drives. Based on the new 34nm process node and able to store three bits per memory cell, the 126 x 126mm chip is reportedly the densest, smallest 32Gb product yet. The MLC memory will also be cheap to produce, according to a joint statement. The new NAND is sampling now. It's slated for mass production in the fourth quarter.

LG Display Expects Growth

LG Display reports that demand for computer monitor panels has improved significantly, and it expects the second half of this year to be good. LG reports that its panel sales rose 75% in July compared to a year earlier. Another helpful factor was the 10% increase in the prices of PC panels in July. As the economy recovers, LG predicts high demand from corporations refreshing their PCs either in the second half of this year or the first half of next year.

Software Spending To Increase In 2010

Research firm Gartner believes that in 2010, organizations will spend more on software by an average of about 1.53%, despite the fact that organizations are slashing IT budgets this year. Of the 1,000 IT professionals surveyed, 30% of Asian-Pacific companies; 28% of North American companies; and 25% of Middle Eastern, European, and African countries expected their 2010 software budgets to rise next year. Gartner says the onus is on software vendors to help companies discover where they can cut costs and most efficiently utilize resources.

HP Cuts Pay Of Employees At Newly Acquired EDS

The Dallas Morning News recently reported that HP has reduced pay for some EDS employees by as much as 30%. EDS is an information technology outsourcer headquartered in Plano, Texas; HP purchased the company in May 2008. HP released a statement saying that, "As part of the EDS integration process, a project was undertaken to ensure that employees in both EDS and HP, holding the same roles, receive comparable compensation based on market rates. While pay will not be impacted for the majority of employees as a result of this process, some employees will receive pay reductions while others will benefit from salary increases."

Get A Grip On What You're Storing

Trim Digital Storage In The Enterprise

by Chris A. MacKinnon

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In today's economy, cutting costs helps keep people employed. The same is true for an area that most companies don't think about often—digital storage costs. Some industry estimates show that companies need only 20% of the documents they have stored, and this can translate into a considerable cost savings for some enterprises. According to Steve Blumenau, vice president of technology and digital archiving at Iron Mountain Digital (www.ironmountain.com), in today's reality, the accelerated growth of data and flat or shrunken IT budgets have added scrutiny on how IT budgets are spent and how much IT resources are consumed by digital storage.

Get A Grip

Blumenau thinks enterprises can get a better handle on the documents they're storing, including determining what they're storing, deciding what's needed, and figuring out the most efficient way to store what's needed. He comments, "In the recent past, every time you ran out of storage, you simply bought more. It was easier to purchase more storage than to actually understand storage and usage costs. Because of this behavior, there has been a lack of education on how to consistently and comprehensively address digital storage costs."

However, Blumenau says the current economic conditions are changing this behavior.

"Now, IT managers are beginning to consider other costs, like power, cooling, floor space, security, and staff, in the calculation of the total cost of ownership of digital storage," he says. In other words, IT managers are now realizing that the simplistic but commonly used cost measurement for storage—cost per gigabyte—is just the tip of the iceberg in understanding the step function impact on fully owning and managing digital storage.

Chris Gladwin, CEO of Cleversafe (www.cleversafe.com), says at a business level, IT organizations need to work with their business units to understand and rate importance of data. "By rating importance of data in daily operations, strategic importance, and other characteristics, enterprises can set better policies for data retention. The truth is that the documents and data are driving business, so enterprises are not going to tell their end users to store less," Gladwin says.

Enterprises benefit from a tiered storage approach, Gladwin says, meaning primary storage, nearline storage, and archive storage. "Each tier is progressively less costly for storage and management. With a tiered storage approach, enterprises can examine what they are storing on each tier and look for low-hanging fruit of data that can be moved down a tier. Enterprises can also consider what policies they should put in place to automate [the] moving of data between tiers."

"When revenues are tighter . . . enterprises naturally have to look internally to tighten the belt, which explains why we are seeing a focus on making IT more efficient."

- Cleversafe's Chris Gladwin

Get A Strategy

Ravi Pendekanti, vice president of business development and solutions at Overland Storage (www.overlandstorage.com), says enterprises can benefit from using strategies to effectively cut the amount of storage they need. "Technologies such as deduplication are very effective at helping companies identify and dramatically decrease redundant data, which can lead to big reductions in storage capacity requirements," explains Pendekanti. "Equally important, however, is reviewing retention policies and determining best practices for archiving data because the 'save everything forever' is an inefficient, costly approach which drains IT and network resources while further complicating file restores in disaster recovery situations as well as data retrieval for compliance or e-discovery purposes."

According to Pendekanti, understanding information life cycles and related business value is the key to determining where data should reside as well as when it can be moved off costly tier 1 storage onto less expensive disk- and tape-based storage and data protection platforms. He says storage and data protection solutions that help lower costs and complexity are gaining traction, especially if they enable organizations to streamline processes and gain operational efficiencies.

Pendekanti says an approach that delivers heightened levels of protection in a simple all-in-one solution is much easier to deploy and manage than discrete products that require integration and sophisticated technical expertise to manage on an ongoing basis. "In contrast," he adds, "turnkey solutions make it much more practical for budget-sensitive organizations, including educational institutions and government entities, to deploy robust data protection solutions that cost-effectively address ever-increasing business requirements."

Get A Technique

Gladwin says most enterprises are working several angles to get a better handle on their storage and storage management. He elaborates, "One approach is to implement virtualization. Historically, enterprise storage has been directly mapped to applications, resulting in inefficiencies because each of the independent applications isn't necessarily fully utilizing the related storage. Virtualization basically operates above the storage appliances to abstract the location of the data from the physical hardware.

Another technique, Gladwin says, is to implement an HSM (hierarchical storage management) approach. HSM typically uses policies to determine the frequency of use of files and automatically moves data between high-performing primary storage and nearline disk storage and tape libraries. He notes, "Enterprises need to revisit any 'store everything forever' decisions and change policies to examine importance of data, and for data that will not be leveraged, include deleting it once they are legally not required to store it anymore."

In Blumenau's opinion, companies keeping all data end up storing active and inactive data on tier 1 infrastructure, which can be expensive and inefficient. He says other companies use backups as archiving, which can also be inefficient. Also, some companies use tapes for backing up and archiving data. "Tape may not be the most efficient or effective media, as it is not searchable and provides low accessibility. For instance, if you're keeping data for litigation purposes, then your archive needs to be secure, auditable, searchable, and in a legally compliant format," he says.

At any rate, Gladwin says in times of economic growth, companies are not focused on saving money as much as making money. So, an IT organization's focus should be on supporting the business with getting applications and storage online to help bring in revenue. He concludes, "When revenues are tighter based on the economy, enterprises naturally have to look internally to tighten the belt, which explains why we are seeing a focus on making IT more efficient." P

Key Points

- IT managers are now realizing that the simplistic but commonly used cost measurement for storage—cost per gigabyte— is just the tip of the iceberg in understanding the step function impact on fully owning and managing digital storage.
- Understanding information life cycles and related business value is the key to determining where data should reside as well as when it can be moved off costly tier 1 storage onto less expensive disk- and tape-based storage and data protection platforms.
- By rating importance of data in daily operations, strategic importance, and other characteristics, enterprises can set better policies for data retention. The truth is that documents and data are driving business, so enterprises are not going to tell their end users to store less.

A Better Storage Handle

According to Ravi Pendekanti, vice president of business development and solutions at Overland Storage (www.overlandstorage.com), companies need to get a better handle on who is storing what and where as well as the overall operational impact of ongoing storage capacity surges. In particular, Pendekanti says out-of-control email growth can severely affect operations, driving up storage costs and creating undue compliance risks. To that end, he says companies should start with a thorough review of how data flows throughout the organization as well as what policies and processes are in place to protect mission-critical information in compliance with corporate best practices and regulatory requirements.

Pendekanti says once you gain a better understanding of what data needs to be stored and why, it's possible to analyze the most efficient place to store different types of information based on its value to the business as well as requirements for availability and accessibility.

Decide Whether To Buy New Or Used

Used Equipment Might Be Cheaper, But Know What To Look For

by Bruce Gain

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SERVERS, WORKSTATIONS, and storage devices can be had for much cheaper than the usual list price. The only catch is that the equipment is used. And for those concerned about reliability, the vendors with well-established track records will honor warranties to the extent that well-known OEMs will.

Admins, of course, often have different reservations about preowned equipment, but the risks involved may not be what you think. Here's how admins can reap huge benefits by going the used route while avoiding some of the potential pitfalls.

The Stigma

Just the very idea of relying on used equipment for an enterprise's data needs and operations is enough to make many data center managers think twice. Because the assumption is that the longer a product is in use, the sooner it will fail, many are reluctant to go the used route for this perceived risk alone. However, according to Phil Poje, chief marketing officer for Stallard Technologies (www.stikc.com), product life cycles do not necessarily represent the main risk factor. Poje notes that "we have all been conditioned" to think about used equipment in a certain way that does not necessarily reflect reality.

"I recently spoke with a data center manager who said he has the most problems with new hardware during the first 30 days. When you first set things up, you can run into a bad hard drive, NIC card, or [case], but then they run like a top," Poje says. "There is very little maintenance once everything is up and going and the equipment is no longer new."

Vendors also contest the mindset that says used wares are mostly old and are purchased by small and desperate cash-strapped firms.

"Equipment is actually available within six months if not sooner [after its first use and] over half of our end-user business is accredited to Fortune 500 IT buyers," says Corey Donovan, vice president of operations for Vibrant Technologies (www.vibrant.com).

Still, the amount of time equipment has been in use can eventually be an issue after a certain amount of time.

"Most companies that operate on a three-year system rotation can easily extend the life of those systems by another one to two years," says Cliffie McKay, director of operations for DMD Systems Recovery (877/777-0651; www.dmdsystems.com). "The one negative component to extending system life is that the return on investment significantly decreases after the third year and, if not properly maintained, [the equipment] will break down more often."

Price vs. Warranty

A key benefit of used equipment is the cost-savings factor. According to Poje, the exact same used servers, workstations, storage devices, and other equipment can be procured for half as much compared to buying brand-new. A midlevel Pentium 4 computer, for example, can be found for around $100, McKay says, and "the savings also relate well with servers and networking equipment, while servers typically have a huge price drop because of software licensing."

But it is necessary to match those good prices with a warranty on which you can rely.

"Look for extended warranties that may provide extended part replacement options in the event of failure," McKay says.

The Right Vendor

There might be a tendency among some used-equipment firms to cut corners and save money by offering sub-par support. In a worst-case scenario, a vendor might offload a large quantity of used equipment that is in poor shape to make a quick buck, while barely honoring an already weak after-sales warranty. It is thus important to do your due diligence when selecting a used-equipment vendor and seek to establish long-term vendor relationships. Among the things to look for are solid references, a long tenure in the business, technical expertise, and a stocked warehouse, Vibrant Technologies' Donovan says.

"In any case, I've often found that preowned products are a great way to save money if you can trust the seller and if you know the product and class well enough to make a good decision," says Rob Enderle, president and principal analyst for the Enderle Group (www.enderlegroup.com). "If either isn't true, buy new."

Some vendors specialize in particular OEM brands, which can add value to their product mix. "Generally, the best place to get used equipment is either from the OEM who built it or from someone whose business is closely connected to this equipment," Enderle says. "In other words, if you are buying used Cisco gear, buy from someone who services and supports it, not from a vendor who couldn't normally spell 'network.'"

Key Points

- Refurbished equipment can be just as reliable as new equipment, despite the stigma associated with buying used.
- Ultra-cheap prices might draw you in, but do a thorough investigation of the vendor before signing the check.
- While some admins might only rely on used equipment for lower-end applications, higher-end and more expensive equipment can generate significant cost-savings opportunities.

High- & Low-End Opportunities

Some buyers may be inclined to purchase used equipment when not much is at stake if and when the equipment malfunctions. Outfitting users with used workstations that primarily run office applications and include regular backups to hedge against potential data loss is one example of how lower-end used equipment can offer a good fit.

"Even if you are talking about critical applications [stored on used hard drives], it is backed up twice. You have double redundancy and disaster recovery," Poje says. "You are not hosting all of that data on a workstation but are hosting it on a SAN or other storage device. But if they go down, you have the data backup at a disaster recovery site a thousand miles away."

But going the used route can also make sense for high-end applications, Enderle says.

"The higher ticket the item, the more sense it may make to buy preowned. Low-cost high-volume items simply don't have the savings to absorb as easily any related costs, and even if the vendor will accept returns, the cost of actually returning and replacing many of these devices could easily exceed your savings," Enderle says. "If the items are simple, and you are capable of sampling them for quality before taking delivery, then this could be an option, but you have to be able to trust your ability to adequately sample that batch." P

Just the very idea of relying on used equipment for your enterprise's data needs and operations is enough to make many data center managers think twice.

Finding Used Equipment At Processor.com

So, you've decided to begin looking for used equipment vendors. But where do you start? *Processor* has a number of advertisers offering used equipment for sale, so look for their ads throughout the publication. Plus, *Processor*'s Web site offers an extensive online database where you can find used equipment by product type, company name, and other search criteria. Found at *Processor*'s home page (www.processor.com), the Data Center Products For Sale database can offer you what you seek in the way of secondhand as well as new equipment.

News

Green Electronics Council Takes EPEAT Global

The nonprofit Green Electronics Council is broadening its green-based EPEAT (Electronic Product Environmental Assessment Tool) rating system for IT products. Already mandated in U.S. governmental agencies, EPEAT, which "helps purchasers evaluate, compare, and select electronic products based on their environmental attributes," will

now be available as an international purchasing registry. The expansion will enable "the world's leading electronics manufacturers to list green computers and monitors in 40 countries across the globe," according to the Green Electronics Council. Buyers in Europe, China, Japan, Taiwan, Australia, New Zealand, Canada, Brazil, and Mexico will now have access to search EPEAT-ranked products. Currently, EPEAT maintains a searchable registry of desktop and notebook PCs, thin clients, workstations, and computer monitors. To be included in the registry, products must meet 23 attributes, which earns the product a bronze ranking. Gold and silver rankings are also available based on how many of 28 optional attributes the product meets.

Extreme Networks Buys Soapstone Networks

Extreme Networks has purchased software vendor Soapstone Networks in a move that will add Soapstone's software control plane and service-aware provisioning system to Extreme Networks' stable of products. "The addition of the software assets from Soapstone Networks into the Extreme Networks intellectual property portfolio continues our commitment to carrier Ethernet," says Glenn Weinberg, VP and general manager of Extreme's software business unit. "The unique provisioning and service-aware capabilities of the Soapstone Networks software will enable Extreme Networks to deliver a more complete, extensible solution to carrier Ethernet service providers." Soapstone's system will be integrated into Extreme Networks' EPICenter Network Management software to offer a service-level view, provision, and management of carrier Ethernet networks and protocols. Terms of the deal have yet to be disclosed.

Microsoft & Nokia Collaborate

Microsoft and Nokia announced an alliance to create mobile enterprise software for Nokia smartphones. The agreement marks the companies' intentions to design and market Nokia Symbian devices that feature Microsoft Office. Nokia has already taken steps to partner with Microsoft by adopting Microsoft's Exchange ActiveSync for email access on Nokia smartphones. The new Microsoft Office Communicator Mobile, along with the Office applications suite, will let users create and distribute Office documents, spreadsheets, presentations, and more.

News

Microsoft To Charge Office Live Customers

Beginning Oct. 1, Microsoft will require payment from all Office Live Small Business service users who previously weren't required to pay the $14.95 annual fee for Web domains. Microsoft explained the change as a goal to compete with other companies that offer similar services, such as Yahoo! Small Business. Those who weren't previously required to pay for service will be charged the same fee as new or recent customers. Microsoft says it can't identify exactly how many users will be affected by the change but says it will be a small percentage.

Study Finds Americans Pay Most For Mobile Phone Service

Mobile phone customers in the United States pay more for their mobile service than users in any other country. According to the latest data from the Organization for Economic Cooperation and Development, for a mid-range package that includes about 780 voice minutes, 600 text messages, and eight multimedia messages, U.S. subscribers pay about $53 per month, or about $636 annually—a sharp contrast to the $11 per month paid by users in the Netherlands. Rounding out the top three with the United States are Spain, whose users pay about $508 per year, and Canada, whose users pay about $501.

Apple Gains Ground In Smartphone Market

Apple's share of the smartphone market is growing by leaps and bounds, according to the latest examination of the smartphone market from research firm Gartner. The iPhone maker shipped more than 5.4 million of its popular smartphones in the second quarter, compared to the 892,000 units it shipped in Q2 of last year; additionally, its market share jumped from 2.8% in Q2 2008 to 13.3% this year. Nokia is still tops in the smartphone market with a 45% share and 18.4 million devices shipped, although its share is down from 47.4% for the same period last year. As a whole, the mobile phone market is down 6.1%, but smartphone sales increased 27% year-over-year, with 40 million units shipped.

Virgin Mobile Subscribers Down, Profits Up

Despite a loss of about 269,000 customers in the second quarter, Virgin Mobile reported impressive profits of $16.8 million, or 23 cents per share—up considerably from the $3.5 million, or 7 cents per share, reported during the same quarter last year. Revenue, on the other hand, fell 3.8% year-over-year, from $319.9 million in 2008 to $307.6 million this year. The company attributes its profits to the success of its hybrid plans, which incorporate both prepaid and post-paid options, and its recently implemented $49.99 unlimited plan. Virgin Mobile is in the process of being acquired by Sprint Nextel in a deal worth $483 million.

Report Shows HUD Needs To Strengthen Its Capacity

A report from the GAO (Government Accountability Office) indicates that HUD (Housing and Urban Development) needs to fully implement the key IT management and modernization controls set up to support mission operations. The GAO reports that the HUD developed an IT strategic plan with goals, activities, and performance targets, but it has not assessed IT performance since the fiscal year 2007. For example, it established policies and procedures for creating portfolios of IT investments, but it lacks related practices to effectively control them, according to the GAO. The report recommends that the HUD Secretary strengthen the IT management controls and complete steps to address the shortcomings of the controls.

Encryption & Security With Cloud Storage

Facility Security, Level Of Data Protection Are Important Considerations

by George Crump

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As many small to medium-sized enterprises consider cloud storage, one of the concerns they have to tackle is how secure their data will be. Security as it relates to cloud storage is often equated to how and if the data is going to be encrypted. In reality, though, security of data in the cloud is much more than that.

Key Points

- Cloud storage can be as safe as, if not safer than, internal storage. But IT professionals must confirm that physical, procedural, and data security are in place.
- For facility security, SMEs have to understand the security capabilities in place at the physical location where the data is housed.
- Data destruction is important: Make sure any provider you use actually deletes and removes any data you decide to destroy from all forms of storage.

According to Justin Moore, CEO of Axcient Technologies (www.axcient.com), a cloud-based backup provider, "Encryption is important, but there are two additional types of security that users should be looking for. First, there is the security of the facility that the storage provider is utilizing and, second, there is the level of data protection that the provider is using. Make sure that the provider is maintaining that they can recover your data in the event that something goes wrong at their facility."

Dave Kubick, vice president of worldwide digital business at Iron Mountain Digital (www.ironmountain.com), agrees. "As the SME marketplace begins the move to cloud-based storage services, they need to look for providers that can ensure that their data is safe, encrypted, and accessible. Safe is, of course, the protection of the data and the facility it is housed in, encrypted so that if an unauthorized person somehow gains access to that data [she] cannot actually read that data, and accessible to ensure that the data is online and available when the organization needs it."

To this Kubick also adds the importance of assured destruction. "You also want to make sure that when your business policies and legal requirements allow for it, and you decide to destroy data, that the data is actually deleted and removed from all forms of storage at the provider. This means that the provider will need to have software and policies in place to guarantee that data's removal. The last thing you want to have happen is to have an old piece of data full of customer records, for example, resurface years after it was supposed to be erased."

Secure The Facility

When it comes to facility security, Steve Lesem, CEO of Mezeo Software (www.mezeo.com), says SMEs have to understand the security capabilities in place at the physical location where the data is housed. "In fairness today," he says, "this is somewhat subjective because there is a lack of standards and certifications. There are few SAS 70 Type II-compliant hosting facilities and more providers are striving to reach this standard, but it does not match the provider space perfectly."

SAS 70 Type II (Statement on Auditing Standards No. 70) was developed and maintained by the AICPA (American Institute of Certified Public Accountants). Specifically, SAS 70 is a "Report on the Processing of Transactions by Service Organizations," where professional standards are set up for a service auditor that audits and assesses internal controls of a service organization. At the end of the audit, the service auditor issues an important report called the Service Auditor's Report.

Lesem advises enterprises to at least look for the basics in a provider or the hosting facility that they use. "Look for physical security capabilities like 7x24 security, video surveillance, biometrics/smartcard/proximity card-based access, as well as software authentication and logging to confirm who was accessing what systems and what they did with those systems, and in a way that ensures non-repudiation," he says.

Lesem says enterprises often overlook the offboarding process that is put in place by the data center. "If the access rights are not immediately and comprehensively revoked," he says, "a disgruntled ex-employee can easily circumvent the security processes and compromise any and all data stored within the data center."

When evaluating facility security, Iron Mountain's Kubick also advises looking for a pedigree in the space. "Many of the providers of the actual customer-facing applications may be new, but inspect where they are going to house your data. Is it in their garage or at a provider who has years of experience storing and securing customer data?"

Final Line Of Defense

The final line of defense in security is encryption. Encryption essentially protects the customer from any mistakes or shortcomings in the provider's or host's security strategy.

Encryption translates data into an unreadable form that then requires a secret code, also known as a key, to be able to read that data. If you don't have the key, you can't read the data. But encryption is not perfect.

According to David Silk, CTO at Bycast (www.bycast.com), "If security is critical, the safest way is to encrypt the data before storing it to the cloud and to manage the keys locally, outside of the cloud." Although this provides the highest degree of protection, he says, if the purpose of the cloud is to provide data interchange, data sharing, data processing, search and indexing, or other value-added functionality, the encryption must be performed by the cloud or the keys must be disclosed to the cloud.

When the cloud is responsible for data protection or key management, data must be encrypted for both transport and while stored. This protects against the threats of traffic interception and theft of the raw storage medium used by the cloud provider. Within the cloud storage system, careful attention must be paid to how keys are managed, as the keys must be isolated from other tenants and, ideally, from the cloud administrators themselves. Be sure to use different keys for each file or object stored, which reduces the severity of the unauthorized disclosure of any given key. P

"Encryption is important, but there are two additional types of security that users should be looking for. First, there is the security of the facility . . . and, second, there is the level of data protection that the provider is using."

-Axcient Technologies' Justin Moore

The Security Of Data Protection

Encryption and physical security are only viable if the data is still there when needed. Data protection must be considered an important component of any data protection strategy. Don't assume the provider is taking appropriate measures to protect your digital assets. Confirm that it has backup procedures in place, and even consider replication capabilities to another facility that is geographically removed from the primary location.

From a data protection perspective, Justin Moore, CEO of Axcient Technologies (www.axcient.com), suggests confirming that the provider is taking the appropriate measures to make sure your data can be made available again if the hosting facility is catastrophically affected. "For many customers, the provider is housing the only copy of data for the SME, and as a result, that provider should be taking at least basic backup best practices to protect that data. The key thing to look for is that the provider is getting the data securely out of the hosting facility."

Disposal Discipline

Responsible Disposal Methods Are Critical To Avoiding Environmental, Security Hazards

by Christian Perry

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Managers of modern data centers face a somewhat competing set of responsibilities. Today, it's not only the equipment that enters the data center that concerns organizations but also the equipment that leaves it. A recent Gartner study indicates that by 2012, 69 million PCs will be refurbished and exported annually to emerging markets, where they could end up in landfills or be otherwise improperly handled. However, with some careful research and disciplined policy, organizations can ensure that their disposal of PCs and other used equipment follows a responsible path.

"Enterprises should be very selective when choosing companies that recycle or repurpose their current equipment," says Cliffie McKay, director of operations for DMD Systems Recovery (877/777-0651; www.dmdsystems.com). "Any computer recycling company should have the capability to track where each asset is shipped, whether it is resold as a complete, refurbished unit or [whether] the individual components are sold to a smelter for recycling. Recyclers should also have an open-door policy for their clients so that the clients can come in at any time and walk through their process."

As older, unused equipment accumulates, organizations can easily find themselves behind the 8-ball, which in turn can spawn irresponsible disposal decisions. But such decisions can contribute not only to worldwide environmental and safety issues, but also to problems that can lead back to organizations themselves.

Choose Wisely

Although some equipment recycling places might offer unbeatable prices, shuffling off unused equipment to a largely unknown entity can easily result in security and environmental hazards. Mark Wilkins, CEO of Nextend (www.nextendllc.com), recommends that data centers select recyclers that promote reuse with recycling practices that are compliant with industry certifications.

"For example, any provider that abides by the Basel Action Network's 'e-Stewards Standard for Responsible Recycling and Reuse of Electronic Equipment' [www.e-stewards.org] commits to ensuring that no electronic waste is sent to landfills or exported either directly or through intermediaries. The best service providers will be committed to e-waste recycling best practices and see if the aftermarket equipment still offers potential. If it does, it will be refurbished and repurposed to continue its useful life," Wilkins explains.

If equipment no longer holds any reuse value, it is dismantled to accommodate harvesting of valuable parts and then broken down into inert materials. From there, the remaining materials are melted down and used in the manufacturing of new products, Wilkins says. Beyond ensuring that recyclers adhere to industry-recommended guidelines, organizations should also confirm that service providers can handle all asset types (such as PCs and servers) and understand the aftermarket potential for those assets.

"As assets age, their value decreases. The ability to recognize the inherent value at the time of audit and capitalize on it through multiple aftermarket channels provides additional revenue opportunities for the enterprise, while it repurposes the equipment or parts for reuse. If there is little to no aftermarket potential, the service provider should also have full capability to manage responsible recycling processes," Wilkins says.

Although some equipment recycling places might offer unbeatable prices, shuffling off unused equipment to a largely unknown entity can easily result in security and environmental hazards.

Be Sure To Secure

The process of responsible, economically sound computer equipment disposal depends on several factors, including data destruction, environmental impact, return on investment, equipment tracking capabilities, and recycler reputation, McKay says. Data destruction is particularly crucial, as data breaches are now more common than ever.

Sherri Davidoff, senior consultant with Lake Missoula Group (www.lakemissoulagroup.com), agrees, noting that many organizations have insufficient secure storage space at individual locations, resulting in improperly stored equipment that gets lost or stolen before it can be properly disposed.

"Finding secure, temporary storage for equipment destined for retirement can be tricky, but it is extremely important. What we really care about [in security terms] is not the entire PC, but the data that resides on it. Companies can pull the hard drives out of the equipment as soon as possible and ensure that at least the hard drives are securely stored. By isolating the hard drives, we can minimize the amount of storage space needed to ensure a secure disposal process," Davidoff says.

To ensure that equipment slated for disposal is properly sanitized, Davidoff recommends that data centers either contract the job to a third party or handle it internally, and the chosen option ultimately will depend on financing, regulations, and staff availability. For data centers that choose the internal option, she says that freely available tools can overwrite data on drives before they are disposed, but it's important to routinely audit the procedures and conduct equipment "spot checks" to ensure that proper sanitization is occurring.

Raising Awareness

Proper disposal intentions can hit a major roadblock if employees aren't on board with a disposal program. According to McKay, every department—from IT to sales to asset management—should be educated about the environmental dangers caused by improperly disposed equipment. In particular, staff members responsible for purchasing, deploying, and recycling the equipment need to fully understand the issues surrounding disposal or work closely with a service provider that handles the disposal.

"Visual advertisements in public places throughout the facility are great ways to communicate with employees," Davidoff advises. "You can show employees what happens to old PCs through real photographs. I have also seen companies do routine walkthroughs and pick up equipment that employees improperly left around for disposal. Employees that left equipment around insecurely were cited. This raised awareness very quickly, because employees had individual incentives to use the proper disposal mechanisms." P

Key Points

- Research indicates that millions of PCs could find homes in third-world-country landfills, emphasizing the need for data centers to responsibly recycle their equipment.
- Choosing a reliable, responsible service provider can help ensure that disposed equipment not only is properly handled but also properly valued.
- Data security is paramount when disposing of (or planning to dispose of) equipment to avoid sensitive information ending up in the wrong hands.

Working To Extend Useful Life

Cliffie McKay, director of operations for DMD Systems Recovery (877/777-0651; www.dmdsystems.com), says that although some computer equipment does find its way to third-world countries, not all of it is necessarily dumped into landfills or otherwise improperly handled—at least not right away.

"There are a lot of developing markets that are using the repurposed technology as a springboard to becoming more influential in the world. There are some countries that can't afford purchasing new equipment each year but can purchase the last generation at incredible discounts. By using the systems the way they were designed to be used, you are extending the life of the systems for an additional three to five years," McKay says.

Such practices can delay the environmental impact caused by manufacturing new units. Although the inevitable environmental dangers caused by disposal will nonetheless emerge after those three to five years, McKay says that a potential solution is for OEMs to find a way to work within those countries to lessen the footprint. He admits this is a lofty goal, but he says it is one of the few ways the equipment disposal problem can be solved.

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Cloud Integration

Experts Agree: Keep It Practical

by Curt Harler

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When it comes to migrating to the network cloud, one thing that should not be in the clouds is your head. Pie-in-the-sky project proposals and programming are the two biggest pitfalls to successful cloud integration.

"The most important thing is to know what it is you are trying to accomplish. Define the project well, specify it well, and establish a finite, achievable task," says Ilan Sehayek, CTO of Jitterbit (www.jitterbit.com).

Two major cloud integration challenges Sehayek sees facing SMEs are pragmatism and personnel. He worries about SMEs that try to accomplish all the wonderful things they've heard that large enterprises are doing—firms with everything-to-everything architecture.

"Start with that as a goal, and you will run into trouble. It will cost too much. Don't try to build or architect everything for every application you expect to see in the next 10 years," he warns. "Don't spend money putting infrastructure in place for systems that may not even exist in a few years." Such a program is simply not pragmatic for SMEs.

Start Here

"I'd select a cloud bus first and nail your architecture down," advises Ray Hudaihed, chief architect for AWPRx, which has ties to 95% of the nation's pharmacies.

"Before you get started, look at your exit strategy," advises Eran Farajun, executive vice president of Toronto-based Asigra (www.asigra.com). "Be sure the application vendor gives you the ability to bring the app back in house or to port it to another service provider."

That means making sure more than one cloud service provider offers the application you want. Farajun recalls the early days of cell phone service when numbers and features were not portable and one had to start all over when changing vendors. Some apps, such as hosted Oracle or Microsoft products, are available many places. However, Farajun notes that some popular services are available in only one place. "If you love the GUI and the app, you are set. But if you change your mind, you really don't have a choice of other providers," he says.

Fears Over Reliability

Proprietary protocols and fears about the reliability of the cloud are the main reasons users are not adopting cloud computing quickly, says Naqi Jaffery, an analyst with Telecom Trends International. In a July report, "Cloud Computing: The Wave of the Future," he says he sees the cloud market quadrupling from $10 billion to more than $40 billion by 2015. Growth could be higher, Jaffery says, if and when the user community gains more confidence in the cloud.

Key Points

- Select a cloud bus first and nail your architecture down. Then, have an exit strategy.
- Pragmatism and personnel are two major cloud integration challenges.
- Reuse of the integration work already done should be a key buying consideration.

On the plus side, Jaffery says the low costs of entry and the pay-as-you-consume model should force SMEs to take second looks at the cloud. He sees no single "killer app" that will drive the market. Rather, he sees a range of solutions available.

That scope of offerings can be a trap. When planning, have a good grip on where your integration will be going over the next six to 18 months. "If you do believe that you will eventually need to integrate silos—say, expanding the sales software to link to content management—then put that on your scope from Phase I," Sehayek says. He notes that integration is not a new concept; the technology is mature and proven. But he warns against biting off more than you can chew.

Sehayek knows there will be instances where a cloud computing application will stand alone in a silo. "But if you want it to be an asset to the whole operation, it will have to talk to other systems you have," he says.

That makes investing in a system that allows reuse of the integration work already done a key buying consideration. Once an SME has spent time and effort creating a template, it should be able to reuse it rather than going back to the starting point.

Farajun says a standard cloud application such as backup can be approached in two ways. First, an SME can consider keeping all of its old tapes, taking only two or three months of backup to the cloud, and then moving forward. "You rarely need to restore data more than two months old," he points out.

On the other hand, it might pay to store old data in the cloud where it is seldom accessed and keep the most current material onsite on tape. "With any application, it is not necessary to pretend it is the first day of your company's history," Farajun says. "Look at moving to the cloud more as a transition than a complete flip."

The Right People

The people you have helping make the transition are also important. Sehayek says an SME is better served by appointing someone comfortable with basic computing, such as a business analyst familiar with SQL or an Excel power user, rather than going out and hiring a systems developer. "The developer's mindset is not what you need," he says.

"Particularly in the small organization, the people most successful with basic integration products are the ones comfortable with computing basics," he says. "You want to be able to put your system in place quickly and easily and not feel you've lost a huge investment."

"The ones who do well are the people who focus on the business," Sehayek adds. Although he admits it is not politically correct to say so, he finds that the more mature person is the better choice for spearheading integration projects. "They care more about making it work well than how it is put together. The purpose of integration is to get a system in place, be sure it works fine, and have it set up so anyone is able to change or replace it," he says.

"Integration is to an application as wiring is to a car," Sehayek says, noting that engineers who design engines and the chassis must have special skills. "But the customer is not buying the wiring; they want something that will work and will be reliable," he says. The same mindset should apply to integration.

Challenges

Integration challenges will face enterprises of all sizes as the organizations acquire more services and need to integrate them. Defining the goals and finding the right integration package to achieve integration will allow an SME to run a reliable, secure network without having to deal with infrastructure.

"Integration is a living being, constantly changing as your business changes," Sehayek says.

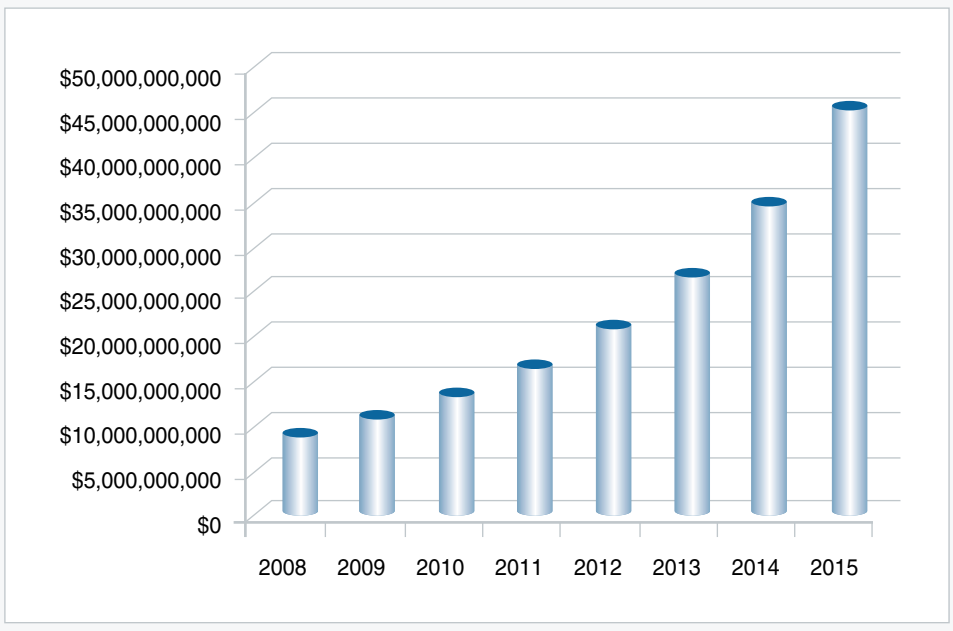
So, should an SME buy now? Jaffery says prices offered right now are reasonable. "Everyone is talking price wars," he says. "But prices have plummeted to a level where cloud computing is cost effective."

Farajun agrees. He sees two price paths unfolding. "Public cloud services, where you share a backend across several customers, absolutely will come down," he says. But he notes there is a practical floor price. After that, he expects competition to be more on SLAs, features, and bundles than on price. But, he says, "We have not seen the bottom yet." Services in the private cloud market will remain a bit higher than public cloud computing.

"The long-term scenario, as Google in particular enters the space, is that cloud computing will be further validated. Then, prices may well go up as companies get reassurances that the issues holding them back have been addressed," Jaffery says. Security is the largest such issue. However, Jaffery says that security questions will be solved and that none of the other issues is insurmountable. P

Projected Cloud Computing Services Revenues

According to figures from Telecom Trends International, spending on the cloud market could quadruple between now and 2015, reaching more than $40 billion by 2015.



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Anthony Huang, TechExecs Network's founder and CEO

Networking: Building Personal Relationships

TechExecs Network Events Help IT Professionals Connect

TechExecs Network (www.TechExecs.net) started about nine years ago as a way for senior IT executives to connect. It has since grown to more than 370,000 contacts throughout the United States. The purpose of the TechExecs Network is to focus on promoting regional technology community, featuring best-of-breed resources available to key decision makers, networking and partnership among technology and industry executives both online and in-person, and ultimately connecting industry buyers and suppliers. Anthony Huang is TechExecs Network's founder and CEO.

Q: Why did you start TechExecs Network?

Huang: I've always wanted to create an association where there is a staff behind the scenes ensuring events are created and moved forward, rather than only with the help of volunteers. Back in 2000, after the sale of my previous IT business venture, we created and focused our efforts on building a group that helps professionals and IT practitioners get better connected and build stronger relationships with their peers. For the past nine years, we have invested lots of time, money, and effort in creating the largest social network of IT executives in the country.

Q: Can you tell us more about the concept of social networking as you see it relate to TechExecs CIO Panel Forums?

Huang: People have always wanted to have a better career, get paid better, live better, and, if at all possible, only work with people they like. This desire for connection and peer-level recognition, in my opinion, is the basis for "social networking." A social network, however, should have a purpose. Senior IT executives, including myself, for example, want to get better connected so we can learn more from each other and do better in our business.

The key to social networking is building real relationships. Although we have our online activities in public forums such as LinkedIn, the TechExecs Network has created a private IT leadership portal that is protected for industry IT executives. Ultimately, the more quality relationships that you possess, the more you are truly connected. This does not necessarily mean the more people you are connected to virtually, the better you will be. People who simply collect virtual connections, when you boil it down, only have an email list of people that they can send messages to. In-person events such as the upcoming TechExecs CIO Panel Forums are where real relationships are forged and expanded.

Q: What value does TechExecs provide for IT executives?

Huang: The TechExecs Network brings together senior IT people in an executive community. The objective is to share organizational values and practices with peers, with the intent to establish a rich network based on collaboration, integrity, knowledge-sharing, and synergy.

Each chapter executive community provides the opportunity to share and learn fresh approaches to IT leadership and to connect IT executives with their peers nationally. IT executives share experiences, ideas, and resources related to the realities of organizational dynamics; business strategy and communications; and the pressures derived from the fluid, global, extremely competitive, and time-sensitive business environment in which IT executives operate.

The CIO Panel Forum—a strategic thinking forum—is the place where leading IT executives discuss key issues related to the role of IT leadership in today's economy, describe the challenges they are facing, and share their best practices with the audience in a lively, interactive environment.

Q: When are your next events, and where and how does one go about learning more about the events?

Huang: To attend or learn more about the next TechExecs Network CIO Panel Forum or a TechExecs social function in your area, go to www.TechExecs.net for the updated calendar. You'll find the fall schedule of events for 10 major metropolitan markets from the East to West coasts. P

Upcoming TechExecs CIO Panel Forums

TechExecs has a number of learning and networking forums this fall. All readers of *Processor* can attend for free.

- **Sept. 17 - Chicago** www.techexecs.net/chicago.htm
- **Sept. 23 - Silicon Valley** www.techexecs.net/siliconvalley.htm
- **Sept. 24 - Los Angeles** www.techexecs.net/losangeles.htm
- **Sept. 24 – Atlanta** www.techexecs.net/atlanta.htm
- **Oct. 6 - San Antonio** www.techexecs.net/sanantonio.htm
- **Oct. 7 - Austin** www.techexecs.net/austin.htm
- **Oct. 8 - Dallas** www.techexecs.net/dallas.htm
- **Oct. 8 - Washington Chapter** www.techexecs.net/washingtondc.htm
- **Oct. 15 - Houston** www.techexecs.net/houston.htm
- **Oct. 29 – Seattle** www.techexecs.net/seattle.htm

Three Questions

One From Many

ScaleMP Uses Aggregation, Not Partitioning, For High-Performance Computing Needs

by Daniel P. Dern

In terms of computer server resources, virtualization has been used primarily to partition—to carve up a mainframe, server, or other computer into virtual machines, sharing the resources of the physical machine, with no individual virtual machine as powerful as the host itself.

Virtualization solution provider ScaleMP, on the other hand, leverages its virtualization technology to aggregate multiple standard x86 servers into one virtual environment for streamlined management. Founded in 2003, ScaleMP (www.scalemp.com) sells to Global 2000 companies, including manufacturers, life sciences, energy, and health care.

Shai Fultheim is ScaleMP's president and CEO; previously, he was CTO of BRM Capital, one of the leading venture firms in Israel, and before that, he ran an IT infrastructure for part of the Israeli Defense Force. Amar Rao is ScaleMP's vice president of business development and marketing.

■ What are the biggest IT-related issues facing today's small to midsized enterprise?

Rao sees cost and complexity as the two biggest IT-related issues that SMEs must confront. "These businesses have to operate on tight IT budgets, so cost is a paramount issue," he says. "They also lack the luxury of elaborate IT skills and infrastructure. This is especially true in the high-performance computing (HPC) segment of IT."

Although HPC systems continue to get less expensive, "The complexity and cost issues remain," says Rao. Using desktop workstations and standard two- or four-socket platforms forces many companies to scale target problems down to fit these systems, "which means they don't get the full insights and answers and the competitive advantage full results may offer," says Rao. But without the right in-house tech skills, upgrading to clusters isn't an easy option.

■ What should *Processor* readers know about your company's products?

"We provide aggregation solutions," says Fultheim. "We take multiple x86 systems and aggregate them into one, providing a high-end symmetric multiprocessor (SMP) computing platform, which can help provide high-end, high-availability computing power more cost-effectively."

According to Rao, the ScaleMP vSMP Foundation aggregation platform creates a single virtual system, with four to 32 processors (128 cores) and up to 4TB of shared RAM.

"The customer's OS of choice will see all these resources," says Fultheim. "If your application needs lots of memory, you have it—ditto lots of I/O or processing power. Meanwhile, you've simplified the day-to-day maintenance of multiple systems by having one virtualized system to manage, instead of seeing each server as one that needs managing."

And, according to Fultheim, "Based on what we are seeing in the market, if you have to use large systems, you save a lot of money by buying these less expensive machines; the vSMP Foundation-based solution is . . . 30% less expensive [than the traditional] SMP approach."

ScaleMP also offers fault-tolerant capabilities for companies where live failover, in which hardware problems do not cause downtime, is essential, notes Fultheim.

■ What makes your company unique?

"Most computer virtualization products are for making many machines out of one," says Fultheim. "We let you aggregate your processing power. And vSMP Foundation can be installed within minutes; you can have the system up and running in a very short time."

ScaleMP™

ScaleMP is distinctive as a company in its technical expertise, Fultheim adds. "Our product requires understanding of the entire software stack from processor, system, and OS and applications, as well as hardware. We have this rare mix of skill sets in our team." P

OPINIONS
INFO-TECH • INSIGHT

Extended Warranties On Desktops & Laptops Are A Racket

Have you ever wondered how much extended warranties on desktops and laptops cost the enterprise? It is becoming increasingly challenging to figure out because vendors are baking the cost of a three-year basic extended warranty into the cost of the hardware. For example, Dell and HP include a three-year basic extended warranty with all of their desktops and laptops. At a glance, you might think, "This isn't costing me anything extra, so I'll take it," but is it really "free"? The answer is no, it is not.

The inclusion of extended warranties is a relatively new phenomenon. It used to be that vendors would include a standard one-year warranty and charge extra for the extended warranty. They still do charge for extended warranties longer than the new three-year standard or for those that include end-user support. But the question really is how much are you paying for the extended warranty, and how can you avoid paying the extra cost?

Getting An Idea Of The Cost

First of all, you should have the option of asking your vendor to remove the cost of the three-year warranty so you can identify how much they are charging you for it. The challenge is that vendors are often unwilling to do so without some serious poking and prodding. To get a sense for how much a three-year warranty costs at retail, look no further than your local computer retailer.

Some national retailers charge for a carry-in three-year warranty on laptops and add another charge for an onsite warranty. Similarly, some computer makers allow for a one-year standard warranty on a personal laptop computer and then add another charge to upgrade the laptop to a three-year warranty. These charges assume a 30 to 33% failure rate (complete replacement) in years two and three of the warranty period (assume a standard one-year manufacturer's warranty is included).

Now, desktop/laptop vendors selling at the enterprise level may not charge quite as high of a margin for extended warranties. But rest assured they are making significant margins on extended warranty charges that are baked into the cost of the hardware. If you ask them to back out the extended warranty cost and they refuse, doesn't that tell you something? Yes, they don't want you to know how much you're paying for their extended warranty.

Look Into Self-Insuring

The notion of self-insuring for desktop/laptop hardware is quite simple in principle. Assume that an enterprise purchases 100 laptops for $1,200 each (including the three-year warranty). Assume further that the cost of the extended warranty baked into the cost of the $1,200 per unit is $200. In this case, the cost to "insure" the 100 laptops against failure in years two and three is $20,000. Now, assume that the failure rate of the laptops is expected to be 10%.

What if, instead, you could ditch the extended warranty cost of $200 per unit and buy the 100 units required plus an additional 10 units at a cost of $1,000 each. You don't even have to buy them all at the same time—keep a couple of spares on hand and top up if need be. Now you are in a position to immediately replace defective laptops with new ones, and even if you throw out the defective unit, you have just cut your cost to insure your 100 laptops in half (from $20,000 to $10,000—the cost of the additional 10 laptops).

Chances are that the failure rate in years two and three (remember, the one-year standard manufacturer's warranty is still in effect) will be less than 10% and that you will be able to repair defective laptops in-house (or have them repaired for the cost of time and materials) and redeploy them for far less than the cost of a new laptop. By simply self-insuring desktops and laptops, enterprises can reduce costs by about 10%. Additionally, downtime is minimized because a replacement can be deployed immediately without having to wait for the vendor to repair or replace it.

This May Not Be For Everyone

The cost model outlined above may break for smaller purchases. For instance, if you are only buying 10 desktops/laptops at a time, purchasing one additional laptop as insurance may not be adequate. The tipping point is likely 50 devices. Although you could take a chance and follow the 10% rule for smaller purchases, you may end up having to top up the insurance inventory if the complete failure rate exceeds 10%. In any case, it's certainly worth holding your vendor's feet to the fire by applying some pressure on extended warranty costs. P

Send your comments to infotech@processor.com

MARK TAUSCHEK

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A Fall Project: Conduct A Data Center Inventory

Like the woodsman who is so busy chopping down trees that he won't take time to sharpen his ax, data center managers often are driven to short-term action at the expense of activities that can increase productivity in the long run. As fall approaches, it's a good time to disrupt that pattern by scheduling a data center-wide inventory. The results—which can be surprising—will give you the knowledge you need to start planning for 2010.

Why Inventory?

Most data centers evolve haphazardly. Servers and bandwidth are added on an ad-hoc basis to address a problem (usually a new application). Too often, the focus is on adding the new, without equivalent attention paid to retiring or streamlining the old.

An infrastructure inventory will help you understand exactly what you have and how it's being used. This information will help you optimize your existing facilities, allowing growth with minimal investment.

What To Inventory

Break your inventory tasks into three areas: physical equipment inventory, application inventory, and network inventory. Depending on the size and complexity of the data environment and past record-keeping rigor, these tasks may take from a couple hours to a few days.

Conduct an equipment inventory. First, consult any old inventory lists you have. Update as best you can against purchasing records and maintenance contracts. This will give you a starting point for the equipment you should have as well as a snapshot of the age and capacity of the equipment.

Next, conduct a physical inventory, both within the data center and on the floor.

Compare the lists. Are there missing servers and appliances? They may be sitting under the desk of a renegade product developer or forgotten in a storage closet.

Conduct an application inventory. List the applications housed on each server, along with its operating system and security parameters. Note the licensing terms. Collect and review any and all application-related usage reports. What are the usage patterns for each? How much server capacity do they use on a regular basis and at peak times? How often are they accessed?

Conduct a network inventory. Get a listing of your services, down to the circuit level, from your provider. Check the list against a physical inventory. Literally check all the circuits in the network interface unit and make sure you know what they're connected to. Use reports provided by your network provider to understand your usage. Are your applications straining your bandwidth capacity? At all times or just peak?

Using The Inventory Data

Now you have enough data to start making decisions. Start by eliminating obvious waste. Are there servers that are supporting archaic, unused applications? Archive any data according to your company's retention policies and remove the applications. Retire or reuse the server, as appropriate.

Do you have unused network circuits (for example, an analog line that used to support a fax machine that was removed years ago)? Disconnect them to save money on your network bills. Do you have unused or obsolete appliances and equipment? Return, resell, recycle, or retire, as appropriate.

Next, look for ways to consolidate and optimize. Applications that use only a small amount of server capacity could be candidates for virtualization. Install a free hypervisor on the server and use the management tool to build applications into VMs (virtual machines) that will share servers. If network circuits are at capacity, consider utilizing WAN optimization services or tools to prioritize network traffic. This can help defer or avoid bandwidth upgrades.

Start planning for 2010 and beyond. Anticipate the challenges. Will you be facing flat or reduced budgets? Will capital budgets dry up? Will staffing remain at current levels? Where do you expect the greatest strain in the data center? Is it in bandwidth to accommodate more users and fatter applications? Is it in processing power, as applications become chattier and more interactive?

Reach out to colleagues in other departments to see what technology initiatives they may be considering. Better yet, enhance your value to the company by bringing suggestions to the table. Has marketing considered launching a social networking site? Could engineering use collaboration tools to communicate with remote partners? The further ahead you can see, the better prepared you'll be to respond.

Determine the health of your server inventory. Instead of replacing older servers, consider outsourcing the applications to a dedicated hosting or cloud services provider. Not only are costs often reasonable, but they tap into the operating rather than capital budget.

By considering these issues now, you'll be better prepared to address not only your own priorities but the goals of the business in 2010. And you'll go into the new year with the knowledge that your sharpened ax can fell a forest.

Send your comments to frostandsullivan@processor.com

LYNDA STADTMUELLER

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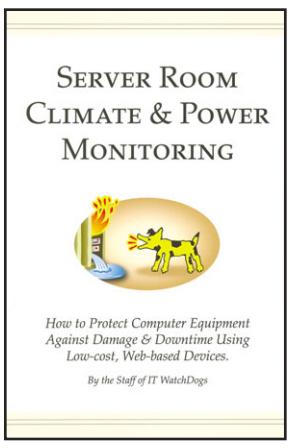

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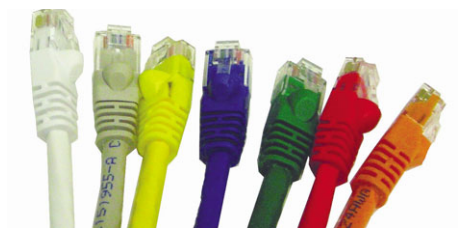

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FEATURED COMPANY

A Multifunction Company

Konica Minolta Business Solutions Has Products For All Your Printing Needs

by Holly Dolezalek

• • •

SINCE THE ADVENT of the digital camera, companies that relied on film photography products have had to either retrench or rethink their business models. However, resourceful companies know that when a door shuts, a window opens.

In 2003, photo film maker Konica and SLR camera manufacturer Minolta merged. Both were well-known companies that had gotten their starts in the world of photography, but both had to shift their focuses to other products as a way to remain relevant as digital photography became more popular. Both companies had found solid profits in office products, and when the two companies merged, so did those office products divisions. The result was Konica Minolta Business Solutions (kmbs.konicaminolta.us), a privately held, 6,000-employee company owned by the newly merged company, Konica Minolta Holdings.

KMBS Wares

Primarily, KMBS (the U.S. iteration of the Tokyo-based Konica Minolta) sells multifunction products, color printers, and monochrome printers. Its multifunction product lines are its biggest sellers. These products, the company's bizhub line, come in color and black-and-white models, and they include print, copy, scan, and fax capabilities. The bizhub line includes models that can produce between 16,000 and 300,000 pages monthly.

The company also sells plenty of its all-in-one printers, which are similar to the multifunction products in that they print, copy, and scan but are different in that they come in a smaller unit size. Its magicolor printers are printer-only systems that come in models capable of producing between 35,000 and 150,000 pages monthly. Its pagepro monochrome printers, intended for small offices and home offices, round out the company's printer product suite. They can handle between 15,000 and 150,000 pages monthly.

bizhub C552

The company also sells wide-format printers, printer systems that are able to scan and print large documents such as engineering drawings, architectural plans, and public works documents. KMBS also sells its share of fax machines and scanners.

In the SME market, Kevin Kern, vice president of marketing at KMBS, says that much of the company's sales come from printers and multifunction products. "We market products from the desktop to the print shop, and we think it's a strength of ours that we don't have to go to other vendors for any of those products," Kern says.

Beyond Printing

KMBS is also a diversified technology company, making less familiar technology such as delicate components in LCDs and glass substrates for thermal hard drives. The company also offers software for cost accounting, security, device administration, document management, print stream conversion, variable data printing, production workflow, and developer support.

KMBS is making its mark in services, as well, particularly with the Optimized Print Services, or OPS, division. OPS offers managed print services, helping to streamline and possibly reduce the number of printers deployed in an office. "We've gone into a lot of our existing accounts, where maybe the office has a color printer and every fourth person has their own printer," Kern says. "There's a lot of interest in rationalizing and compressing fleets of printers, just as there is in compressing the number of servers in the data center. By replacing older equipment with more efficient but fewer products, we help them streamline cost and realize some green savings, as well."

Other services include its authentication and security practice, which integrates multifunction products' security features with overall server and directory management, and the workflow practice, which includes document imaging and management, scanning and cost recovery solutions, workflow customization, and integration with SharePoint.

Distributed Company

Headquartered in Ramsey, N.J., KMBS has about 20 small distribution centers around the country and three major distribution centers in Windsor, Conn.; Huntington Beach, Calif.; and Brooks, Ky. At the Brooks center, a UPS location shares the space, meaning products from that facility can be ordered as late as midnight and still shipped the next morning.

There's also a customer service center and an R&D facility at the Windsor location, another R&D facility at Huntington Beach, and a third in Colorado.

Revenue comes from three sales channels in North America, Central America, and South America. KMBS' direct sales are handled by about 2,000 salespeople, who are located in the headquarters and at about 100 sales offices around the country. They sell all of the company's product lines and the software that enhances product functionality. A network of about 500 authorized dealer partners also sells KMBS products, and many of those partners are located in the same locations as the sales offices.

Finally, the company has a network of about 2,000 value-added resellers. Although the VARs add some sales to the total, the majority of KMBS sales comes from direct sales and dealer partners, with each contributing about half of the overall total.

Hard Times & Opportunities

The tough economic times have imposed a challenge on the company in a particular area: leasing. A high percentage of KMBS' products are leased, particularly in the SME market, and although the credit markets have loosened up a little in the past few months, approval rates for leases are way down. "The banks have really tightened up their standards, and our current customers can't get financing, so we've seen rates that are 20% lower than they were 18 months ago," Kern explains. "But it did pick up significantly in June, which is encouraging, and we're going to have to ramp up production in response."

Some of the company's challenges come from good times, though. In the past few years, KMBS has acquired several companies, bringing in several new products and many new employees. Each company had different technology platforms for its CRM—one used SAP, another used Oracle, and so on—so the acquisitions have meant a lot of work to integrate those companies with KMBS' existing infrastructure. "We've made a big investment in CRM, so we've been doing a lot of training to make sure that our reps get the right information in the CRM system," Kern says. "Mashing all that together has been a big deal, but I think we did a good job of making it seamless to the customer and to the sales force, which are the two groups you really don't want to upset."

KONICA MINOLTA

Kern notes that even in the downturn, the company has found opportunities for growth, and he thinks that will continue, especially in the print services division. That division is growing and developing further offerings, including work in redesigning a company's document capture and production. "We're helping companies rationalize their fleet of printers, but we're also helping them figure out how they can convert their paper documents to electronic and integrate those into the workflow," he says.

KMBS' R&D division is also working on many new products. For example, KMBS is working now on an organic LED-based lighting, a thin-film type of lighting that has a high output but a low temperature. New imaging products are also being created in the company's medical group, and Kern predicts that many new products in segments from personal health care to IT will be coming from the company.

"At heart, we're more of a bunch of engineers having fun than a consumer marketing company," Kern says. P

A Sampling Of Offerings From Konica Minolta Business Solutions

Product	Description
bizhub 40P/40PX	Black-and-white printer capable of 45 pages per minute and a monthly volume of 200,000 pages.
bizhub C10/C10X	Multifunction product/color printer capable of 5ppm color, 20ppm black and white, and 35,000 pages per month; also copies, scans, and faxes.
bizhub C552	Multifunction printer capable of 45ppm color, 55ppm black and white, and 200,000 pages per month; also copies, scans, and faxes.
magicolor 7450 II	Printer capable of 24.5ppm (color or black and white) and 120,000 pages monthly.
pagepro 1380MF	Black-and-white printer capable of 21ppm and 15,000 pages monthly.

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- KMBS specializes in printing solutions, including multifunction products, printers, copiers, scanners, and fax machines.
- The company also offers print management solutions, imaging security, and workflow management.
- "We market products from the desktop to the print shop, and we think it's a strength of ours that we don't have to go to other vendors for any of those products," says Kevin Kern, KMBS' vice president of marketing.

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The MovinCool division of DENSO Sales California has pioneered the use of portable air conditioning solutions for a variety of North and South American markets since 1982. MovinCool works with a national network of distributors and suppliers to provide product sales, installation, and rental.

Products Sold:

- Office Pro Portable Air Conditioner Series for indoor environments such as server and telecom rooms
- Classic & Classic Plus Portable Air Conditioner Series for moisture removal, outdoor and industrial spot-cooling
- CM12 ceiling-mounted air conditioner for cooling small server rooms or telecom closets

(800) 264-9573 | www.movincool.com

Physical Infrastructure

PDUs direct

Established in 2008, PDUsDirect.com is an online wholesaler providing a select line of PDUs for server and networked environments. PDUs Direct's basic, metered, and switched Rack PDUs provide local and remote power management, power monitoring, and environmental monitoring. We pride ourselves in offering industrial-grade quality products at the lowest prices, with the fastest shipping (most orders shipped within 24 hours) and simplest purchase process.

Products Sold:

A complete line of 20A PDUs, including metered, basic, and switched.

(888) 751-7387 | pdusdirect.com

Physical Infrastructure

RACKMOUNT SOLUTIONS, Ltd
where customer service matters

Rackmount Solutions' mission is to listen to the IT engineer's specific needs and deliver superb-quality, high-performance products through continuous product innovation and operational excellence. We pride ourselves in providing quality customer service, products that fit your IT requirements, and solid value for your money.

Products Sold:

- Wallmount and server racks and cabinets, including sound proof, air conditioned, and large cable bundle
- Desktop/tabletop portable racks
- Shockmount shipping cases
- Bulk cable

(866) 207-6631 | www.rackmountsolutions.net

Physical Infrastructure

Server Technology
Solutions for the Data Center Equipment Cabinet

Server Technology is committed to the PDU market with the largest group of engineers dedicated to power distribution and other solutions within the equipment cabinet. Advancements in device power monitoring help data centers monitor and improve their efficiency, and continuous research and development is fueled by companies that look to Server Technology for their custom cabinet power solutions.

Products Sold:

A complete line of cabinet PDUs, including Per Outlet Power Sensing (POPS), Rack Mount Fail-Safe Transfer Switch, Console Port access with remote power management, Switched, Smart, Metered, Basic, and -48 VDC

(800) 835-1515 | www.servertech.com

Physical Infrastructure

SnakeTray®

From the company's inception in 1996, Snake Tray's focus has been the development of superior products that help eliminate repetitive, labor-intensive installation steps. Snake Tray products are designed better than traditional cable management and power distribution products, allowing our products to deliver unsurpassed cost savings because they're easy to install. Added to this is our expertise in datacom and data center cabling, which aids our customers during project planning.

Products Sold:

- Cable management
- Power distribution
- Distribution boxes
- Airflow solutions

(800) 308-6788 | www.snaketray.com

Physical Infrastructure

TEMPERATURE@LERT®
USB TEMPERATURE MONITOR WITH EMAIL ALERTS

Boston, Mass.,-based Temperature@lert manufactures products designed to be as simple as possible to provide the most reliable temperature monitoring for your IT equipment. Temperature@lert has been growing at a steady, measured pace, which allows it to exceed customer expectations in terms of product quality and support, and its customer support staff is composed only of members of its product engineering team, ensuring superior support.

Products Sold:

USB and Wi-Fi versions of the Temperature@lert device, which monitors data center temperature, alerts you to problems, and takes corrective action as needed.

(866) 524-3540 | www.24sensor.com

Physical Infrastructure

designed and manufactured by upsite technologies®

Founded in 2001, Upsite Technologies has established itself as a leader in the marketplace for high-availability data center solutions, concentrating on hot spots and energy-efficiency issues. Upsite founder Kenneth G. Brill recognized a need for products and solutions reaching far beyond standard engineering and consulting offerings. Upsite has developed a suite of products designed to increase the reliability and availability of data centers while reducing energy costs.

Products Sold:

A line of products designed to solve heat-density problems in data centers, including blanking panels, temperature strips, and raised floor grommets to seal cable openings.

(505) 982-7800 I www.upsite.com

Networking & VPN

BARRACUDA NETWORKS

Companies rely on Barracuda products because they're easy to deploy and use, don't require IT expertise, and come with automatic updates. Barracuda does not charge per-user, per-port, or per-server licensing fees, making its products among the most affordable. As a customer, you'll be backed by Barracuda Central, an advanced 24/7 security operations center that works to monitor and block threats.

Products Sold:

- Spam and spyware protection
- Email archiving
- Data backup and disaster recovery
- Content filtering and application blocking
- Firewalls and SSL VPN
- Link and load balancing

(888) 268-4772 I www.barracuda.com

Storage

adaptec®

Adaptec provides I/O solutions that protect, accelerate, optimize, and condition data. Adaptec products are used in IT environments ranging from on-demand cloud computing to traditional enterprise data centers. The company's products enable data center managers, channel partners, and OEMs to deploy storage solutions to meet their customers' evolving IT requirements. More information is available at www.adaptec.com, on its blog at storageadvisors.adaptec.com, and at adaptec.com/facebook and twitter.com/Adaptec_Inc.

Products Sold:

Data storage I/O products, including ASICs, HBAs, SATA/SAS and SCSI RAID controllers, and software for IP SANs

(408) 945-8600 | www.adaptec.com

Storage

CMS PRODUCTS

Established in 1983, CMS Products is a leading innovator in data backup, encryption, and security technology. CMS Products has received global recognition for its work in developing leading-edge, easy-to-use products that revolutionize the notebook and desktop data backup/restore and storage industry.

Products Sold:

- Backup and restore disaster recovery software and systems, including laptop, desktop, and secure versions
- Laptop hard drive upgrades
- Data security products, including encryption software, encrypted portable backup, and encrypted flash drives

(800) 327-5773 | www.cmsproducts.com

Clients

dtSearch® www.dtsearch.com

Maryland-based dtSearch started research and development in text retrieval in 1988. The company is known for speedy adoption of new programming standards, OSes, and file types. Plus, it has a flexible licensing model. Typical corporate use of dtSearch includes general information retrieval, Internet and intranet site searching, and email archiving and email filtering.

Products Sold:

Text retrieval products, including:

- Desktop With Spider
- Network With Spider
- Publish For CD/DVDs
- Web With Spider
- Engine For Win & .NET
- Engine For Linux

(800) 483-4637 I www.dtsearch.com

Equipment Dealer

COMPUREX SYSTEMS CORPORATION

Since 1987, Compurex Systems has sought to be a one-stop source of technology, including systems and storage, network applications and peripherals, and service and repair. Compurex Systems prides itself on offering competitive pricing, rapid delivery, quality product, and attention to detail and customer service. At Compurex Systems, we look to make long-lasting relationships with our customers and suppliers. Our customers return because they know they can trust us.

Products Sold:

A complete line of new and certified refurbished servers, networking, storage, and telecommunications hardware and services from DEC, Compaq, and HP.

(800) 426-5499 I www.compurex.com

Equipment Dealer

DMS DATA MEDIA SOURCE

The Data Media Source is your best source for discounts and deals on all formats of data media products. We have a huge inventory of brands, categories, and capacities at prices below wholesale. We buy up excess inventories, closeouts, and returns and offer our resellers pricing below the direct manufacturers on most items. Our 20+ years in the business of selling only data media gives us the experience and resources to make every order you place with us more profitable for you.

Products Sold:

A complete line of data media, including DLT, SuperDLT, LTO, AIT, and QIC

(800) 252-9268 I www.datamediasource.com

Equipment Dealer

DMD Systems Recovery

DMD Systems Recovery offers new and refurbished computer equipment and services. We provide exceptional value and quality because of our experience in procuring high-quality equipment. DMD also provides cost-effective and environmentally safe computer and communications equipment disposal services. Our dedicated staff can handle all aspects of equipment disposal, from logistics to reporting.

Products & Services:

Equipment disposal services, along with a complete line of used and refurbished equipment, including computers, networking, laptops, monitors, point of sale, servers, storage, and telecommunications.

(877) 777-0651 I www.dmdsystems.com

Equipment Dealer

IGS DECPARTS

IGS is an independent manufacturer and source of supply, service, and depot repair of obsolete Digital Equipment Corp. parts, products, and systems. We maintain an extensive inventory of DEC parts and equipment; some date from the 1960s. We refurbish and service these parts, adding current technology when applicable. We provide Advance Replacement Service within 24 hours if we have the item in stock and, with 75,000 stock items, chances are we will.

Products Sold:

Digital Equipment Corp. parts, products, and systems, including memory, storage, processors, display and video, printers, and cables, for repair, lease, or rental

(888) 332-7278 I www.decparts.com

Equipment Dealer

iTT Information Technology Trading

At Information Technology Trading, our goal is to help you acquire the right hardware or software solution. We specialize in purchasing and reselling data-processing equipment and have more than 21 years combined experience. We provide services and system upgrades, DASD, communication, and memory. We're also an outlet for off-lease portfolios.

Products Sold:

- AS400, Advanced System/36, R/S6000, ES/9000, and PC systems (including lease and rental)
- CPUs, memory, disks, tapes, displays, and controllers
- Services, including system design and installation, maintenance, and buyback of existing hardware

(877) 715-3686 I www.itechtrading.com

Equipment Dealer

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- Dedicated to employee development
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Products Sold:

We buy used cell phones & PDAs, including Apple, LG, Blackberry, HTC, Motorola, Nextel, Nokia, PalmOne & Samsung.

(800) 248-5360 I www.pacebutler.com

Equipment Dealer

In 1987, Pegasus Computer Marketing started providing mainframe products to the end-user market. What began as a sales-only organization soon adapted to offer in-house repair and refurbishment. During the past 10 years, Pegasus has focused primarily on the point-of-sale and barcode industries, buying, selling, and providing service contracts for anywhere from a few scanners to hundreds.

Products Sold:

We buy, sell, and service:

- Point-Of-Sale Equipment and POS/PC Flat Panels
- Wired and Wireless Barcode Hardware
- Kronos Time Clocks and Accessories

(800) 856-2111 I www.pegasuscomputer.net

TEMPERATURE@LERT®

USB TEMPERATURE MONITOR WITH EMAIL ALERTS

Temperature@lert monitors the ambient temperature and alerts you via email when it rises or falls outside your acceptable range. The temperature sensor is accurate to within ±0.5°C and can report temperatures from -40°F to +200°F. The customizable alert message can be sent continuously or just once when an alert is triggered. Real-time graphing and XML support provide you with the tools you need to integrate temperature readings into Web sites and other third-party applications.

USB Edition • $129.99

- Connects to your PC via an available USB port, so it never needs new batteries or an AC power adapter
- Notifies you via email of changes in room temperature
- Precalibrated sensor
- Runs on all Windows platforms
- Logs to TXT, temperature graph, event log, and XML
- Runs as a Windows service
- SNMP support
- Easy integration with IIS
- Includes free software upgrades for one year
- Choose degrees Celsius or degrees Fahrenheit
- Support for SMTP authentication
- Free shipping

Wi-Fi Edition • $299.99

- Connects to your network via 802.11b/g wireless and is powered by an included AC wall adapter—no computer required
- Notifies you via email of changes in room temperature
- Precalibrated sensor
- Includes free software upgrades for one year
- Logs temperature readings to text and XML
- XML data can be easily integrated into custom applications
- Real-time temperature graph
- Choose degrees Celsius or degrees Fahrenheit
- Support for SMTP authentication
- Expansion jack for humidity sensor (coming soon!)
- Free shipping

Temperature@lert • (866) 524-3540 • www.24sensor.com

Prepare For The Unexpected With Room *Alert*™

No one knows when or how disaster will strike. We just know the potential is always there, so preparation is crucial to minimizing its impact on computers, networks, users & business.

When disasters occur, there are significant costs in areas that go far beyond the simple replacement of damaged hardware. This is because what happens in the data center or other facility effects the entire organization. If disaster strikes your facility, how will it impact business? Who will get the blame? Could it have been prevented? What will it cost?

AVTECH has a full line of powerful, scalable Room *Alert* solutions for real-time environment monitoring in a computer room, data center or other facility. All models arrive assembled with easy to install hardware, cables, sensors, easy-to-use logging & alerting software, printed documentation, unlimited technical support and a '30-Day Satisfaction Guarantee'. Users can typically install in under 10 minutes.

Room *Alert* products monitor critical environment conditions like temperature, power, humidity, flood, smoke, room entry, air flow, motion and more, alert staff by any method and can take automatic corrective action. There is a model that is right for any organization and budget... yours too!

Solutions Start At $275

Room *Alert* products can monitor:

- Temperature
- Humidity
- Heat Index
- Main / UPS Power
- Flood / Water
- Room Entry, Motion
- IP Network Cameras
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- Air Flow
- Sound, Light
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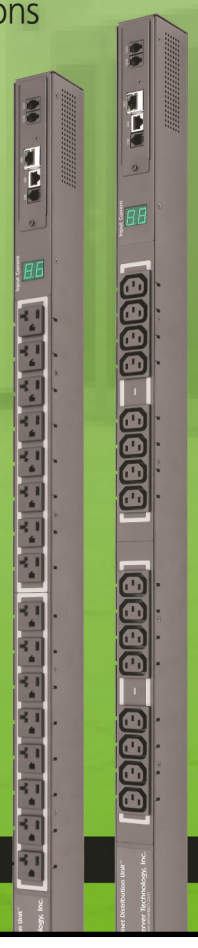

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To learn more visit **movincool.com** or call **800-264-9573**

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Office Pro Series

Classic and Classic Plus Series

CM12

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Reduce IT maintenance cost

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The next innovation in RAID I/O

Savvy system integrators know that enabling and protecting RAID controller cache offers significant performance benefits while also safeguarding against the loss of cached data during a power or system failure.

New Adaptec RAID controllers with Zero-Maintenance Cache Protection automatically save cached data during a power outage to solid state flash memory, providing complete cached data protection for up to 10 years without the inconveniences of batteries.

- **No battery:** no more buying and replacing costly BBUs
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- **Big savings:** save up to $10,000 over a 4 year period when you remove the battery requirements

Learn more about all the benefits and ongoing promotions at:

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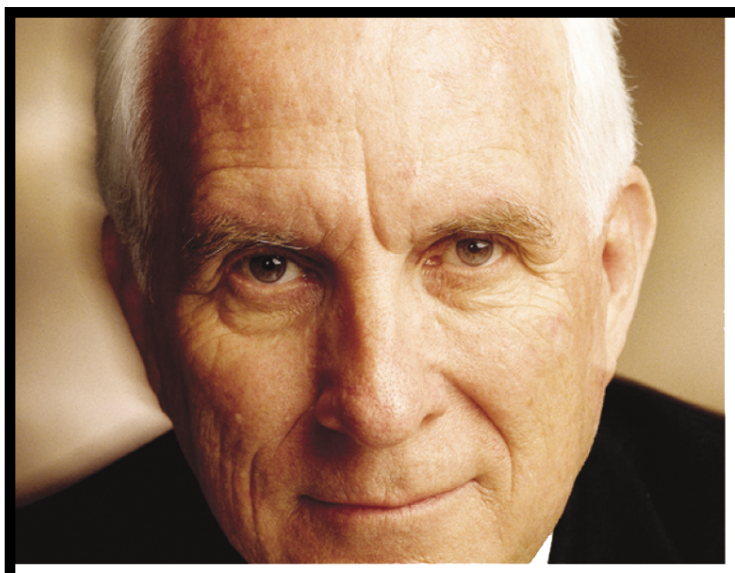

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Automatic Transfer Switch—ATS

Standard Features

- Out-Of-Phase Source Switching
- 8-15ms Switching Time
- Programmable Dropout Voltage
- Programmable Switchback Voltage
- SNMP And HTTP With DS-Series
- PCB-Based Reliability
- Reports Volts, Current, Watts, VA
- Break-Before-Make Transfer

Provide Redundancy To Single-Corded Devices With The Ability To Switch Out-Of-Phase Sources In 8 To 15ms.

Providing redundancy on the power-circuit level is critical to maintaining uptime. The ATS Series provides a simple and reliable solution for automatically sensing power loss and seamlessly switching to a backup circuit. BayTech ATS transfer switch line offers a unique approach to performing the transfer by completely severing the connection between the source and load then waiting for the zerocrossing to perform the transfer. This is the driving force behind being able to perform out-of-phase transfers with a low-cost solution. Monitoring Power on the ATS is a unique feature which provides information about:

- Amperage Load
- (Watts) True RMS Power
- Volt-amps
- Voltage
- Internal Temperature

By combining the ATS and the DS-Series, console server alerts on power and transfers can be sent via secure SNMP V3.

DS-RPC Remote Site Management Series

Device Management

- Console Port Management
- Remote Power Control
- True RMS Voltage/Current
- SNMP Support
- HTTP Power Control
- SSHv2/SSL Secure Access
- RADIUS Authentication
- Direct TCP Port Access
- Telnet/SSH Menu Device Selection
- Device Port Naming
- Individual Port Password Assignment

BayTech's DS-RPC Remote Management Series provides secure and reliable management for your network, servers, and console ports. The DS-RPC combines the powerful combination of power management and console access. The cost-effective DS-RPC Series is meant for single connection applications. Security features such as SSH v2, RADIUS authentication, SNMP, and user access lists per port allow system administrators to remotely manage the DS Series with greater confidence and control. The selected host module provides either secure in-band or dial-up out-of-band access to your DS-RPC Series remote management solution.

Bay Technical Assoc. Inc. 5239 A Avenue Long Beach, MS 39560 Tel: 228-563-7334 Fax: 228-563-7335 sales@baytech.net